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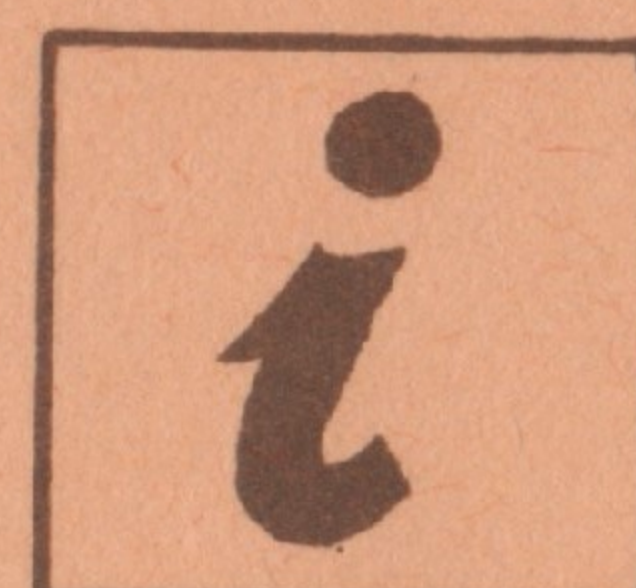
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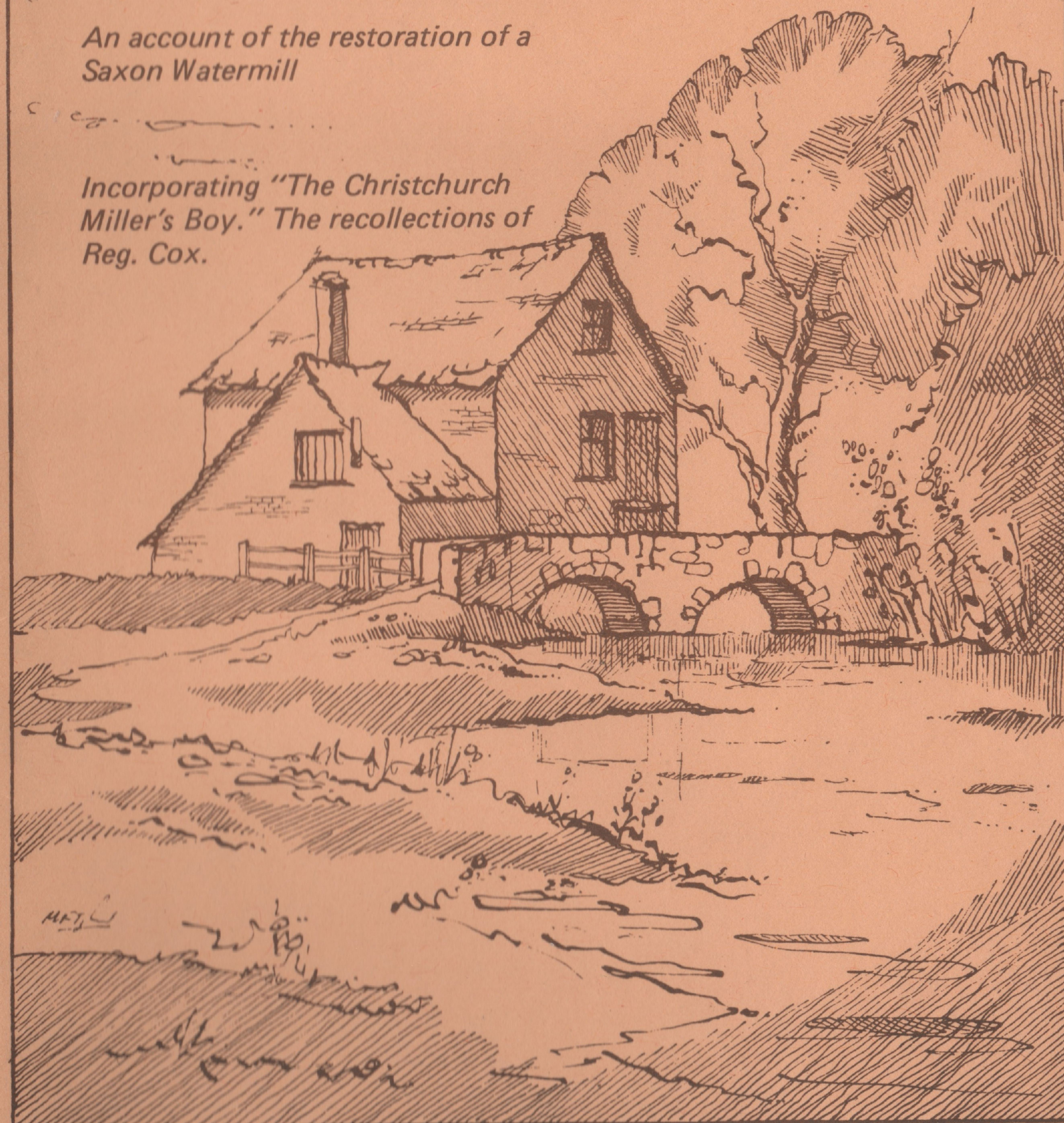
Place Mill The Quay, Christchurch

Organised parties, schools, archaeological groups etc.
off season arrangements - contact Borough Engineer
Christchurch 486321

PLACE MILL

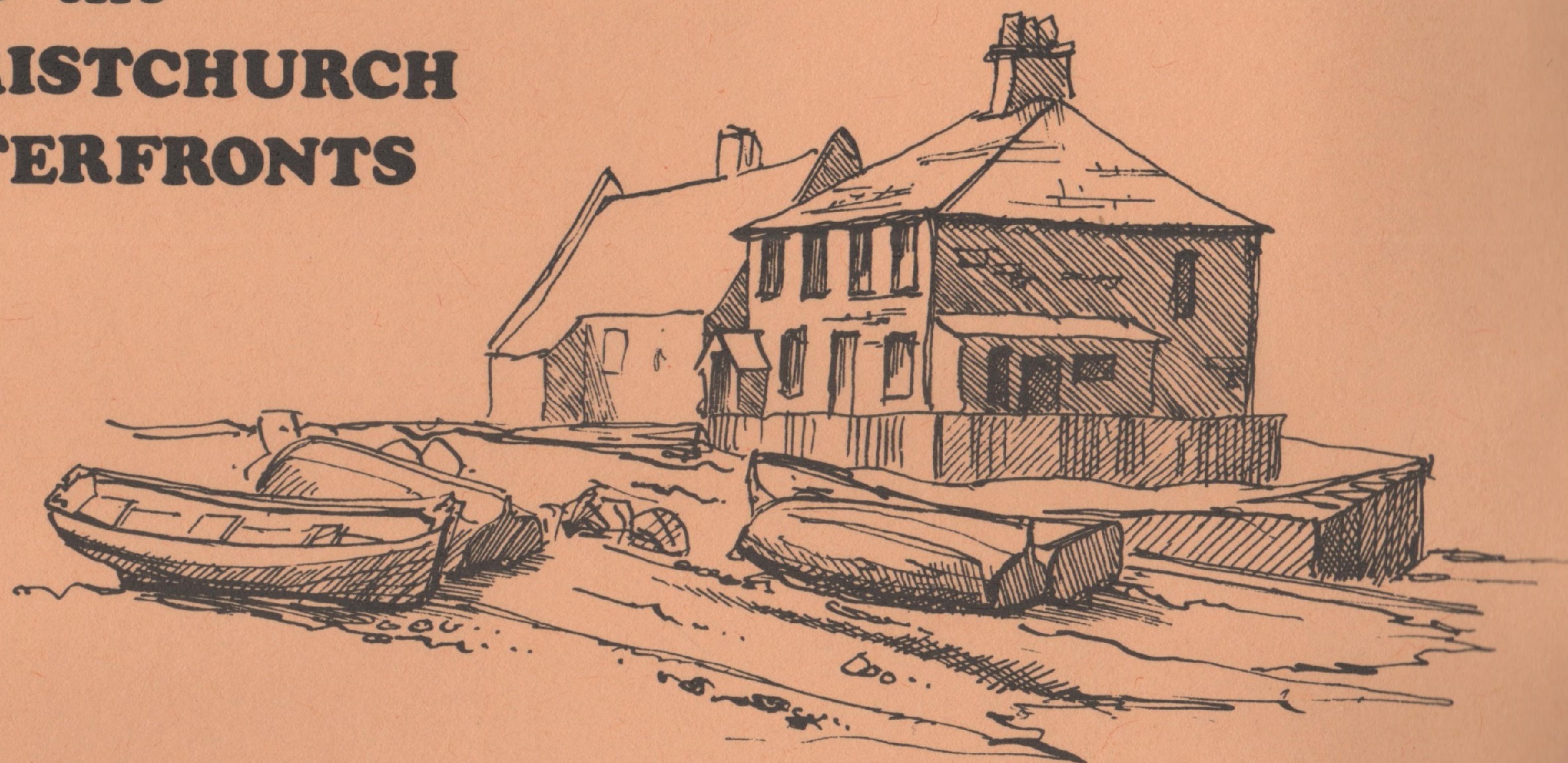
*An account of the restoration of a
Saxon Watermill*

*Incorporating "The Christchurch
Miller's Boy." The recollections of
Reg. Cox.*



Christchurch Borough Council

visit the CHRISTCHURCH WATERFRONTS



Mudeford Quay

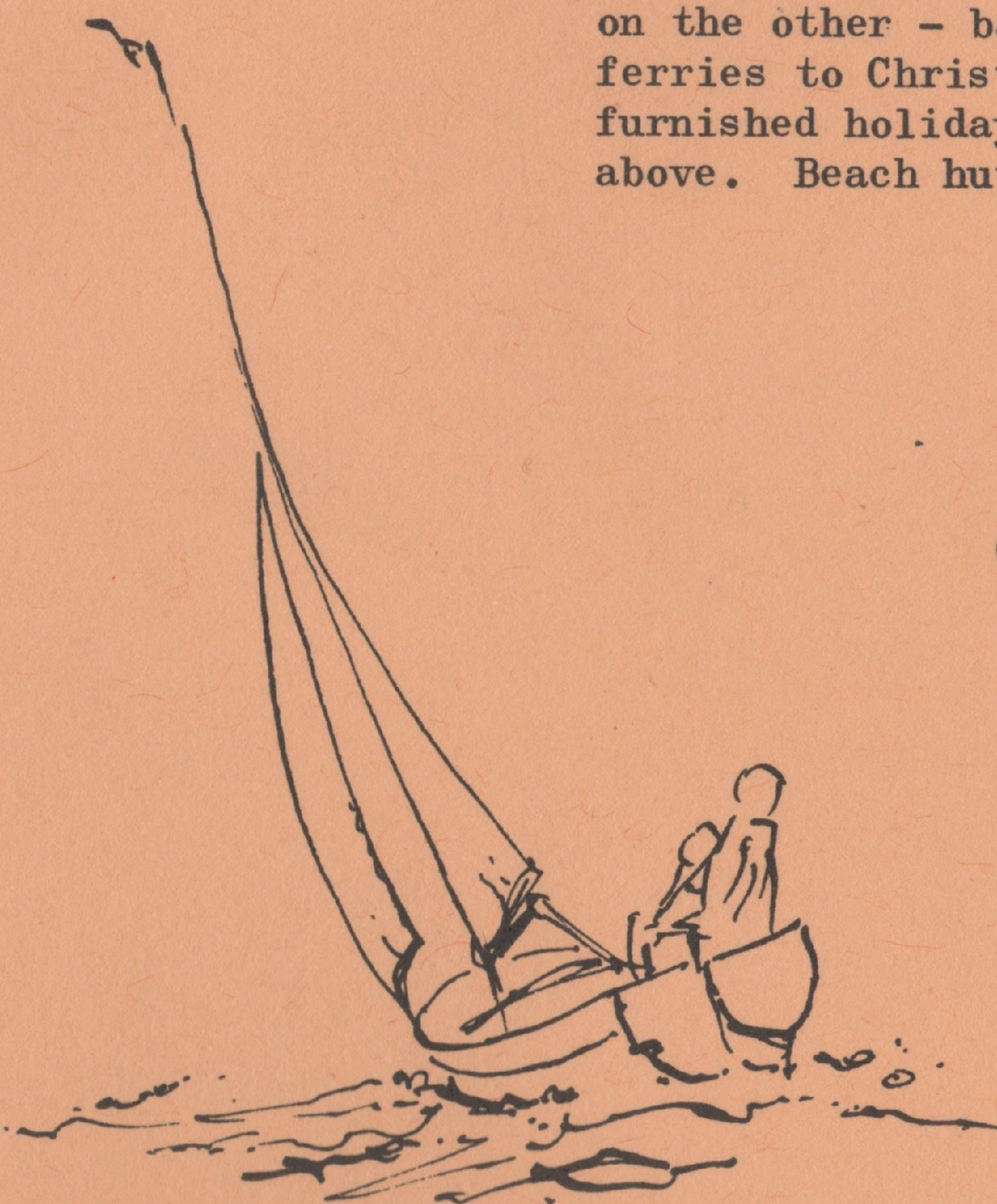
Fishing quay with views of The Solent and Christchurch Harbour - licensed cafe and public house - large car park - ferries to Mudeford Sandbank and Hengistbury Head - furnished cottage. For full particulars, scale of charges and application form for cottage, contact The Borough Treasurer Christchurch 486321.

Mudeford Sandbank

with the sea on one side and Christchurch Harbour on the other - bathing - deckchairs for hire - cafe - ferries to Christchurch Town Quay and Mudeford - furnished holiday flats. For full particulars, as above. Beach huts amongst the sand dunes.

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Riverside open space close to the Priory Church and Town Centre - novelty golf - deckchairs for hire - band concerts - boating - cafe - pony rides - paddling pool - table tennis - children's amusements - ferry - car parking.



FOREWORD

It was very gratifying to me that after so many years of trying to persuade the Council to renovate the "old mill" before it was too late, a Minute was passed in 1981 enabling the work to commence.

It was made possible by the allocation of funds from Municipal Lotteries amounting to nearly £5,000 and Council sponsorship of a Youth Opportunities Scheme. These two facts coupled with the wishes of the Amenities Committee of the Borough Council and the skills of the Borough Engineer's staff, with a special mention of Mr. Frank Tyhurst's personal efforts, have seen Place Mill to its present state of restoration. I hope it will give pleasure and interest to future generations.

Eric N.S. Spreadbury
Chairman
Amenities Committee
Christchurch Borough Council

Introduction

In 1981, Christchurch Borough Council was able to start the long-awaited restoration of Place Mill. All previous efforts to improve the Mill had been thwarted by a variety of circumstances, mostly within the Council's control but difficult to resolve all at once. Firstly, although Council-owned, the Mill had a sitting tenant, a pleasure boat operator, and the Council was unwilling to attempt to dislodge a good lessee with a long-standing connection with the town without proper recompense. Secondly, the ever present problem of financing the work seemed insurmountable, particularly in recent years when environmental schemes were the first to be struck from the municipal budget. Thirdly, the necessary expertise was not readily available, in a field where the number of experts is declining rapidly.

1981, however, saw a change of fortune for the Mill, which was approaching the point where the fabric of the structure was too badly damaged to repair. A move to new municipal offices by the Council released a number of timber modular buildings, one of which was moved to rehouse the Mill's sitting tenant; the instigation of municipal lotteries and the Government's new accent on the Youth Opportunities Programmes provided the financial impetus and the town's Borough Engineer agreed to embark upon the restoration with advice from the County Council and local archaeological authorities.

This booklet gives a guide to the restoration carried out to date and includes what is known of the history of the Mill. A few relevant technical details are included for the benefit of the interested industrial archaeologist and there is a simple explanation of the internal workings. The booklet also includes the text of "The Christchurch Miller's Boy", a series of recollections in the early life of Reginald Cox, the son of the last miller of Place Mill, who left the mill in 1908. His memories were set down in a publication previously only available as an educational booklet (now axed due to financial restrictions) and are reproduced here verbatim.

It is particularly pleasant to record that Place Mill was officially opened to the public on Thursday, 28th July, 1983 by Reginald Cox himself, in the presence of The Mayor, Councillor Kenneth Gibbs and the Chairman of the Amenities Committee, Councillor Eric Spreadbury.

PART I PLACE MILL

The Mill in its Environment

Place Mill is situated within the ancient walls of Christchurch Priory and upon Town Quay, which was once a busy port facility for unloading coal and other goods. It is a Listed Building (Grade II) standing in the designated Christchurch Conservation Area and the nearby millstream bridge and priory walls are also protected structures.

The Mill is thought to be unique in Dorset, in taking its water supply from one river, the Hampshire Avon and discharging into another, the Dorset Stour. The millstream itself is a notable engineering feat starting over a kilometre upstream at Brewhouse Hole and falling to the Mill at an average gradient of only 1 in 5000. There is a regulating weir just below Bridge Street, where the stream runs very close to the river.

The Mill is a smaller example of the type commonly found on older estates or near the great churches of the land, measuring approximately 9 m. (28 ft.) x 5 m. (16 ft.) internally. It is a three storey structure comprising a Machinery Floor at ground level, a Stone Floor at first floor level and hopper type storage at second floor level. The Stone Floor houses two sets of grindstones, one apparently for fine flour and the other for animal feed. The waterwheel is a modified undershot type and is thought to have unusual millrace features probably associated with the difficult head of water and tidal conditions.

The Mill must have had an interesting and varied existence since there is evidence of a number of structural alterations. The north-west elevation, for example, shows three such features, with ancient stonework at the base and perhaps tudor brickwork surmounted by Victorian brickwork above. In general, the basic structure is in need of considerable repairs but must look much as it did in its latterday prime. Inside, only the Stone Floor is seriously damaged and it is hoped that the restoration work will at least provide a good standing exhibition of the milling process when work is completed.

History

The Domesday Book records two mills at Christchurch, one belonging to the King and the other to the Canons of the Holy Trinity, the latter being worth thirty pence in 1086. It is not known if Place Mill stands upon the site of either but some time later, one Baldwin de Redvers issued a charter allowing the Canons of Christchurch to take water for their own use from that used by his own mills upstream. It seems likely that the Mill is contemporary with the Priory, circa 1100 A.D.

By 1539, the Canons, who also owned mills at Knapp and Throop, had converted Place Mill into a fulling shop, for the preparation of woollen cloth but it is known that it was converted back to a flour mill later. On the dissolution of the Priory, Henry VIII continued the Canons' lease of the Mill together with three others to John Carter for £14 per annum and in 1610 it was given by James I to his eldest son Henry. On Henry's death the Mill passed to his brother, who became Charles I. After the

Civil War it was sold to Richard Fenn who, in 1683 conveyed it to his widowed sister Jane Tregonwell. Later owners were her daughter Mary, who married Jacob Bankes, their son of the same name, followed by John Coventry and his niece Augusta, who married Sir George Edward Pocock.

His son, Sir George Francis Coventry Pocock eventually sold the Mill to the Mayor, Aldermen and Corporation of Christchurch in 1888 for £1,100 together with the miller's tithe cottage and garden, pieces of land near the ancient gate of the Priory, the millstream to and including Brewhouse Hole and the Town Quay with its buildings. The Mill continued working under lease from the Corporation until 1908 when excessive vibration caused such damage to the structure as to make it uneconomic to repair. In 1910, after considerable local controversy, including a petition of disapproval to the Council from the public, Place Mill was leased to a local boatman for use as a boat repair shop and store.

The Mill was under lease to the Keynes family for over seventy years. During the latter ten years various unsuccessful attempts were made to instigate its improvement and restoration until 1980 when alternative premises were found for the boat store at Quomps, just upstream. The Council invited tenders for its re-use, with a planning brief which encouraged its restoration and opening to the public and in due course several firm offers were received. Most of these, however, included proposals for conversion to business premises or for catering and the Council finally decided to accept none of the bids and to carry out the restoration itself.

So far as the structural history is concerned, little is known about earlier reconstructions except from visual evidence on the building itself. It is known, however, that in 1874 when the machinery was valued at only £50, nearly £200 worth of work was carried out by local contractors. This sum must have covered a very extensive refurbishment and probably included all the cast iron machinery, a new roof and perhaps even the upper storey brickwork. Certainly both machinery and brickwork appear contemporary with the period.

Milling and the Miller

The mashing or grinding of cereals for food is as old as agriculture, but first references to watermills were made only two thousand years ago. Prior to that, and indeed up to mediaeval times, corn was prepared on hammer stones, saddle stones or in querns. The quern, in particular, was probably a valuable family heirloom, handed down through generations, and became the subject of fierce controversy in the middle ages, when the church and landed nobility succeeded in monopolizing the right to grind corn as part of the feudal structure of the society. There is a well-known example of this in the history of St. Albans Abbey, Cirencester. In the thirteenth century, the abbot confiscated about eighty querns from the local population and paved a floor of the abbey with them. During the Peasants Revolt of 1381, however, the locals tore up the floor and eventually, after further victimisation, took their case to the Cirencester Assizes where the dispute was settled in favour of the abbot. Milling thus came under manorial and monastic control (soke) throughout the land and the common farmer was forced to take his corn to the local mill and pay his one sixteenth toll to have it converted into flour.

The Dissolution by Henry VIII may well have been a major upheaval for the milling industry and it is possible that many millers will have become owners or at least more independent tenants. Certainly, the miller became a very important and central figure in the local community, since nearly everyone visited him to hire his services or to buy his products. He will have wielded considerable power over the local economy, especially if an owner-occupier and was probably amongst the more well-to-do of the area. Dishonesty was not unknown in the trade and many court rolls have cases involving disputes about the miller's share of the operations.

Early watermills were equipped with wooden machinery and evolved slowly until the Industrial Revolution, when the exploitation of waterpower became a focus for the inventive minds of the new industrialists. Engineers such as John Smeaton, Andrew Meikle and John Rennie contributed much to milling technology in the eighteenth century and the industry could be said to have reached a peak in the mid-nineteenth century when Sir William Fairbairn, General J. V. Poncelot and Joseph Colynn concentrated on optimising water supply and perfecting the hydraulics of watermills. At about this time, however, the invention of the water turbine and the greater emphasis on alternative methods of grinding such as roller milling began to sound the death knell of the familiar stone watermill and although some mills of the old type were still in operation well into this century, most have suffered the same fate as Place Mill.

The last miller of Place Mill was Andrew Cox who worked for Messrs. Cuff and Sons and who moved to Knapp Mill in 1908 when Place Mill was closed. His son Reginald is, at the time of writing, still very much alive and a sprightly 82 year old and is the last surviving man to have known the Mill in operation.

Making a Start

With the advent of the Government's schemes for the unemployed and Youth Opportunities Programmes, the Council saw a unique opportunity to make a start on Place Mill. The Council sponsored a Project Based Work Experience Scheme, one of the special programmes administered by the Manpower Services Commission. This involved the recruitment of six young school-leavers who would otherwise have been unemployed and an adult supervisor to work in the Mill for a nominal period of 12 months under the overall control of the Borough Engineer. The M.S.C. paid a weekly allowance of £25 to the young trainees together with the wages of the adult supervisor and in return the Council undertook to train the youngsters in basic skills such as carpentry, bricklaying and allied disciplines.

The Council's financial contribution, funded largely by municipal lotteries, catered for the cost of the materials, plant hire and incidental expenses together with the cost of co-ordination by Council Officers. The Council was fortunate in finding six youngsters with a genuine desire to work and learn and a skilled adult supervisor who had experience in the maintenance and repair of old buildings. Work actually started on 14th September 1981 and continued until 11th September 1982, when the trainees became too old, at 18, to qualify for Youth Opportunities Schemes. Work continued with the adult supervisor retained as a resident craftsman and Clerk of Works for small external contracts.

Restoration (I) - Survey of the Damage

When the Mill was vacated by the Council's last tenant a full survey was undertaken to find out the extent of the damage. Besides being full of the accumulated debris of over seventy years of boat maintenance, there were obviously serious structural faults in the fabric of the building. Symptoms of these, cracks in exterior brickwork and wetrot in beams, were visible at a casual glance but much detailed exploratory work was necessary to isolate particular faults, the principal ones being as follows.

The whole south-east side of the building was found to have serious defects. On the Hopper Floor the two main timber roof trusses had failed at the wall, leaving the roof loading to be carried by minor beams, resulting in considerable sagging of the roof and misalignment of the upper brickwork. The floor of the hoppers had slumped due to partial failure of the two main beams underneath, disturbing the ancillary machinery in the central bay. On the Stone Floor, the whole south-east half of the floor together with the hurst frame and bedstones had slumped 175mm (7 ins.) due to wetrot in the foot of the timber supports either side of the pitwheel pit. On the outside of the south-east wall, the main roof timbers and floor joists of the workshop had rotted, through a constant leak at the roof line and the resultant redistribution of loading had displaced brickwork in both the main building and the waterwheel annexe. The main bridge beam of the annexe, over the millstream, had also failed at the main wall and the whole north side of the pitched roof here was supported upon an iron wedge driven into a stonework joint.

The main machinery at Ground Floor level was found to be in fair condition generally. The cast iron elements particularly comprising waterwheel skeleton, pitwheel and shaft, wallower and stone nuts seemed none the worse for seventy years of neglect, but the timber great spur wheel had been severely attacked by worm. Most of the wooden teeth in the gearing were either missing or badly worn and the hurst frame and tentering beams had suffered varying degrees of dry rot, worm and death-watch beetle. The whole assembly was locked solid due to the slumping of the Stone Floor, although a small movement of the waterwheel was found possible. The timber paddles of the waterwheel were entirely missing but two paddle supports were preserved for patterns.

On the Stone Floor, only the bedstones remained, otherwise the whole floor had been gutted. The two runner stones, the tuns and gravity feed system together with the layshaft had been stripped out and the upright shaft had been sawn off at floor level. Most of the ancillary machinery including the sack hoist, mixing hopper and power transmission on the floor above was intact, although displaced by structural failures.

Throughout the whole structure there was evidence of dry and wet rot, worm and beetle damage in varying degrees and many minor faults such as roof leaks and cracks in walls, mostly associated with the more serious structural defects. None of the timber flooring was considered sound and many of the floor joists were severely damaged by worm and beetle. All the windows were too badly affected by wetrot to be retained and the door frames were in an advanced state of decay.

There was some evidence of previous efforts to cure structural defects. Steel ties had been installed wall to wall in eight places, corresponding to major floor and roof beams, together with a number of smaller ties on

the gable ends. These have been reliably dated at about 1908. Roof truss failures had been bodged with timber plates but mostly without effect. Failure of the worst main beam under the Hopper Floor had been temporarily cured by a pit prop support down to the Stone Floor and the hurst frame beneath had several temporary props from the ground floor. Throughout the Mill, many joists, purlins and other timber components had been doubled or replaced and there were signs of many minor repairs and improvements. Of earlier vintage, there was evidence of much more major alterations. The Mill seems to have had two reconstructions on the upper floors and roof, with Victorian brickwork upon older, perhaps Tudor brickwork, all upon probably Saxon foundations. Over the waterwheel the pitchline of an earlier roof was found on the south-east wall, whilst elsewhere there were bricked-up doors and windows.

Restoration (II) - Putting Things Right

The first priority in restoring the building to a state suitable for public viewing was the renovation and repair of the staircases, both of which were in a dangerous state. The bottom flight, indeed, had wear on the underside of the treads as well as the top, indicating that they had been "turned". It was decided to replace all the stairs. The bottom flight was copied exactly, but the single top flight, once an unbroken 16 steps, was split into two flights for reasons of safety. This entailed some alteration to the catwalk on the Hopper Floor, but care was taken to preserve the main elements intact. A third staircase was constructed in the workshop as a fire exit.

The workshop was the next major job to be tackled. Since this room was a relatively recent addition and of little archaeological value, it was decided that there could be no objection to siting the essential fire escape within its walls, or to the inclusion of an observation panel in the floor over the waterwheel. The old steel sheet floor panels were removed and several rotten joists replaced, after which the room was floored in timber. The two lateral walls, one of corrugated iron and the other of lath-and-plaster were stripped and timbered. Handrails, guard-rails and decoration completed the work. Below this room, the covered bridge over the millstream was almost entirely missing and this was rebuilt at an early stage. The roof over the waterwheel, once supported by the bridge beams, was held up by one small steel wedge driven into the stonework. This whole section was jacked up from the millstream bed and a new greenheart main beam installed alongside the old member. A new bridge was built beside this beam. The upstream wall of the waterwheel annexe, once fully timbered, was stripped and security bars replaced so that the waterwheel can be seen from the stone bridge upstream of the Mill.

The internal structural faults were carefully assessed and it was decided that they should be treated with the minimum of disruption to the fabric of the building. Deformities in walls and roof, arising out of these faults, were accepted as irrevocable and repairs were tailored to suit. The main roof trusses, both of which had failed at the south-east wall were supported by new knees braced against the stone walls on the floor beneath, whilst the upper storey brickwork, deformed by this damage, was merely repointed as found. Only the small section dissected by the ridge of the outhouse roof was demolished and rebuilt, since this proved unsafe. The massive beams on the floor beneath, both exhibiting severe signs of stress, were strengthened by new structural timber columns. The

southerly of the two had failed at a scarfed joint at the south-east wall and was repaired by replacing the scarf and placing a new greenheart column under the joint, braced down to the mill foundations. The other, having failed centrally, was permanently repaired by replacing the temporary pit prop with a new column. During these repairs, the opportunity was taken to jack up these beams to help realign the slumped Hopper Floor and the displacement here has been reduced to less than a quarter of the original.

On the Hopper Floor, the entire catwalk decking, severely damaged by death watch beetle, was replaced together with several joists and supports. Every effort was made to retain the old sack rails and toe boarding which help to give an impression of the working Mill. The decks of the hoppers and machinery space were also badly affected and most of these have been renewed. All the machinery here, with the exception of the sack hoist, was dismantled for the re-decking and was refurbished prior to refitting.

The Stone Floor, considerably disrupted by structural repairs, was entirely re-decked and many of the joists replaced. Settlement of the floor during structural failure had pulled joists from their supports, giving the impression that the building had "stretched" longitudinally. In every case, replacement joists had to be longer than the original. Beneath this floor, one of the main support beams was given a new stone corbel, whilst two of the four central columns supporting the hurst frame were modified to cure wetrot at the bases. During this operation, the floor was temporarily supported by jacks whilst the rotten bases were trimmed by hand and hung in buckets of preservative for two days. After a thorough soaking, the bases were then newly mounted on brick plinths built beneath and the whole assembly carefully lowered back into position.

Inspection of the roof revealed that approximately 60% had been extensively repaired in recent years but the remainder, on the northern corner, was in dire need of attention. There were several bad leaks and many of the timbers, including the north-east gable wall plate, were rotten. The suspect area was stripped of the tiles and covered with tarpaulins whilst new timbers, purlins, and laths were installed. All the original hand-made tiles were rehung, replacement for those broken coming from another previously demolished outhouse. The tiles were hung traditionally with hand-pared holm oak pegs and during the course of the work, 1,856 of these pegs were painstakingly hewn from a dead bough appropriated from a tree overlooking the Mill itself.

Elsewhere in the Mill, a multitude of non-structural but essential repairs were carried out including new windows throughout, new doors on all floors and improvements to floors, steps and partitions. Where possible, all remedial works were tailored so as not to prejudice the reinstatement of working parts and every effort has been made to keep to traditional methods and materials. One rare departure from the original was the first floor north access door which was converted into a stable door (not uncommon in other mills) so that the picturesque bridge above the Mill can be seen in safety from this floor.

Externally, little has been changed on the Mill itself but the immediate environs have had a good deal of attention. The courtyard on the north side has been paved and the millstream banks restored, whilst new access paths now serve both sides of the road. Three new gardens have been

created and these have been stocked with traditional plants once found in any miller's cottage garden, herbs such as thyme, bay and rosemary together with hardy shrubs like broom and cotoneaster.

On the forecourt, a millstone, once set in the road has been converted into a picnic table, in a sunny spot - always a favourite for artists. On the threshold of the Mill, excavations revealed an old worn out french burr millstone, placed there, as was the tradition, to keep the miller's feet dry. This was carefully lifted and reset into the path, together with another Derbyshire gritstone rescued from the road nearby. Around the periphery of the mill, another five old millstones, a gift from the nearby Red House Museum, have been placed to provide the basis of a projected external static exhibition.

So far as the machinery is concerned, effort has been concentrated upon restoration of the waterwheel, being the main motive element as well as the most spectacular item. New paddle supports were cut by hand from oak for individual fitting to the cast iron skeleton and paddle blades have been cut from luan, an African hardwood. Water control was a vital prerequisite to operating the waterwheel and the Council was fortunate in being able to enlist the assistance of Armfield Engineering Limited, the original makers of the cast iron machinery, to help in this work. Armfields located a secondhand set of weir adjustment gear and also fabricated new millrace water control equipment. A new weedtrap had to be constructed on the site of the old trap, between the Mill and the bridge. Internally, the remainder of the machinery and the hurst frame at first floor level is still in need of restoration, much being dismantled to allow structural repairs to be completed.

Some Technical Notes

In the past over 170 mills were scattered about Hampshire, four in Christchurch alone, and Place Mill although on the small side, will have been little different from most of them. The three storey configuration was common, consisting of machinery space at ground floor level, bulk storage for unground grain under the roof and the milling floor between. Deliveries and collections of grain and flour could have been made at both ground and first floor levels but it is likely that the large wheeled horse-drawn farm carts used in the past were high enough for the latter to be more common. There is an area of damage in the brickwork on the north corner of the Mill which is said to have been caused by the backing-up of carts to the access doors. The Mill once stood alone under the shadow of the great Priory, surrounded by river and tidal marsh and access by high bed carts would have been essential for all deliveries.

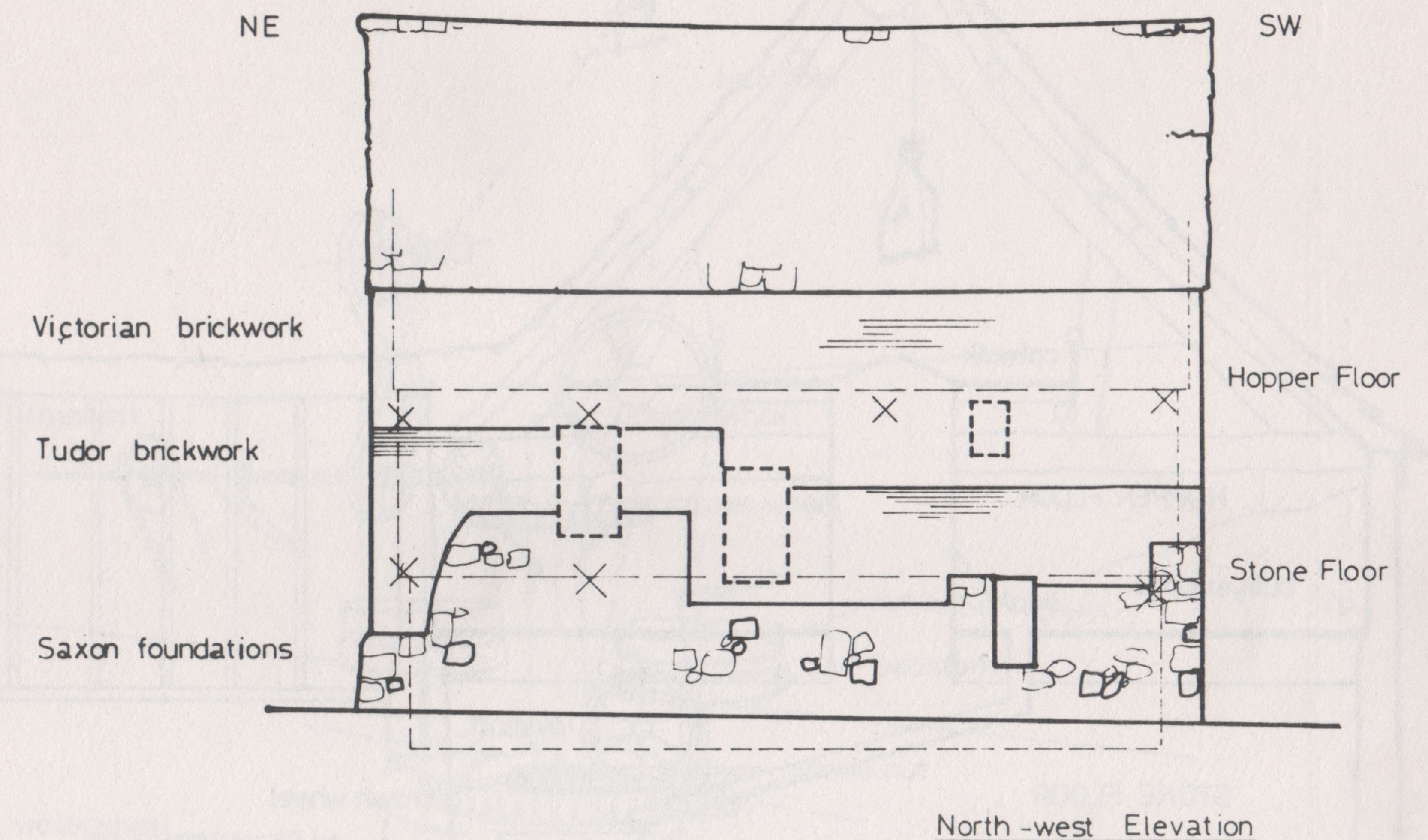
The main machinery of the Mill is also based upon a common pattern, with the principal drive derived from a 3.2 m. (10 ft. 6 in.) waterwheel and transmitted through a pit wheel, wallower, great spur wheel and stone nuts to the grindstones on the milling floor. The gearing ratio is 72:36 and 84:21 giving a speed of 8:1, waterwheel to grindstone. It is the linear circumferential speed of grindstones which is critical in milling and if the 1.3 m. (4 ft.) stones revolved at the normal 150 r.p.m. the waterwheel would have to revolve once every 3 seconds. The upright shaft, extending as it once did through the building to second floor level, would have driven a layshaft from which all the ancillary equipment was powered. Little of this has survived but it would have included the sack hoist, a malt mill, wheat screens, a straw cutter, a

bean mill and perhaps mixer hoppers. The only item surviving intact here is the sack hoist which in common with most, was a single chain lift operated by an ingenious clutch system which allowed the miller to use the facility alone and from any floor. Throughout the main machinery it can be seen that the design allowed for meshing gears to be of mixed materials, wood to cast iron, in order to reduce vibration and noise. It also allowed all the wear to take place on wooden gear teeth which could be readily removed and replaced. The bulk of the machinery was supplied by Armfield Engineering Limited of Ringwood (who are still trading) and some of their specialised items such as the Armfield arch (supporting the upright shaft) are known throughout the world. As a further measure to reduce vibration in the main structure of the building, the hurst frame is largely independent of the outside walls, being restrained only by central floor joists.

Adjustment of the gap between the grindstones, absolutely critical to efficient milling, was termed "tentering". It was achieved in this mill by a double lever jacking device which moved the runner stone by turning a thumbscrew on the machinery floor. This simple and somewhat crude arrangement was deceptively sensitive and the smallest easily defined increment, a quarter turn of the thumbscrew moved the runner stone 0.167 mm or 1/150th inch.

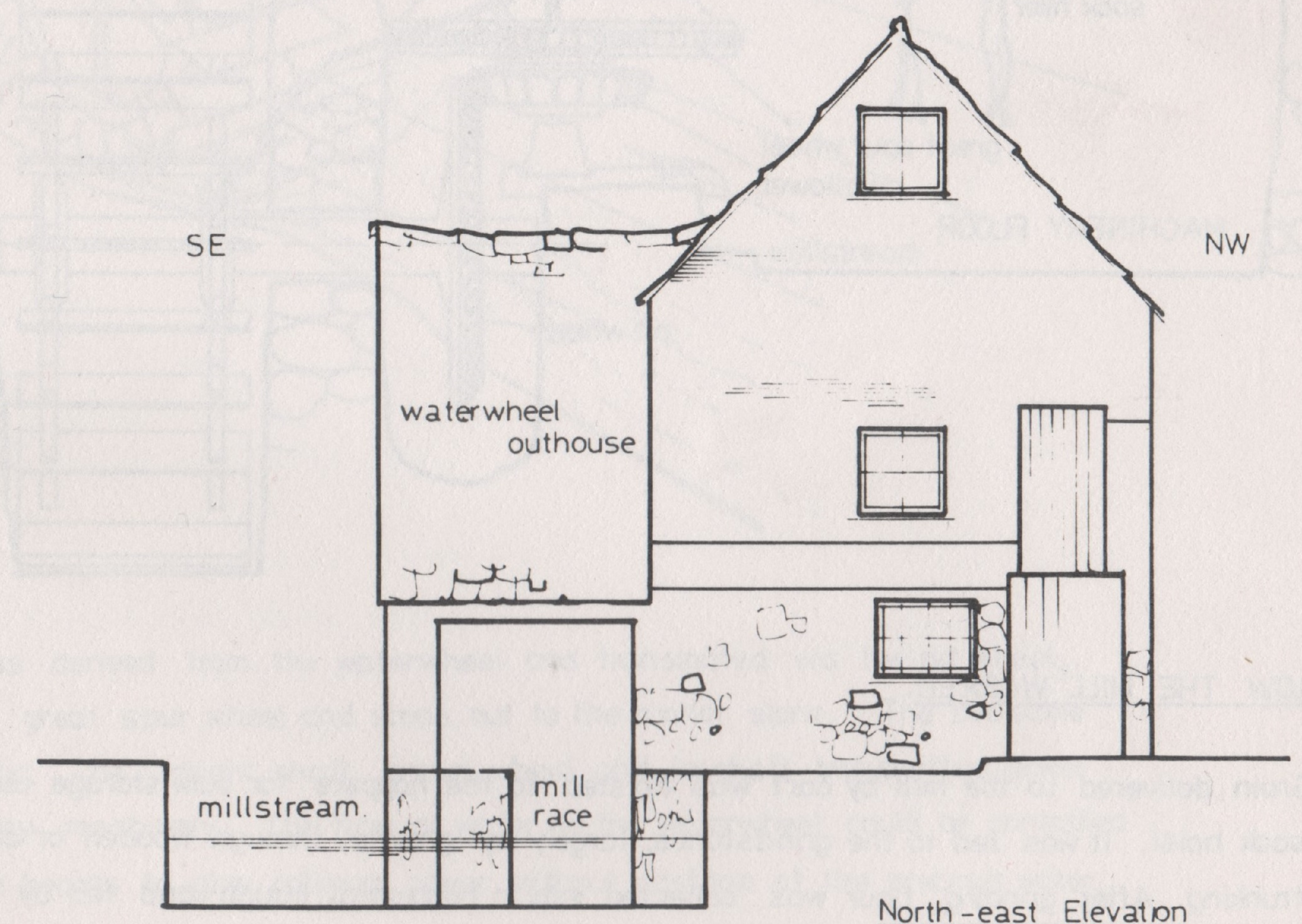
The grinding of corn was achieved by the scissor-like action of sharp edges on the face of the rotating millstones and the stones had to be "dressed" in a particular fashion to accomplish this. Those found at Place Mill were prepared in the common 'ten harp' pattern and showed only a moderate amount of wear. Although the surviving bedstone and the two used runner stones found outside the mill are the coarse Derbyshire gritstones used mainly for animal feed preparation, the discovery of a used French burr stone under the threshold suggests that flour for bread was once produced at the mill. It is likely that structural defects in the building precluded the more sophisticated grinding of flour well before the final closure of the mill.

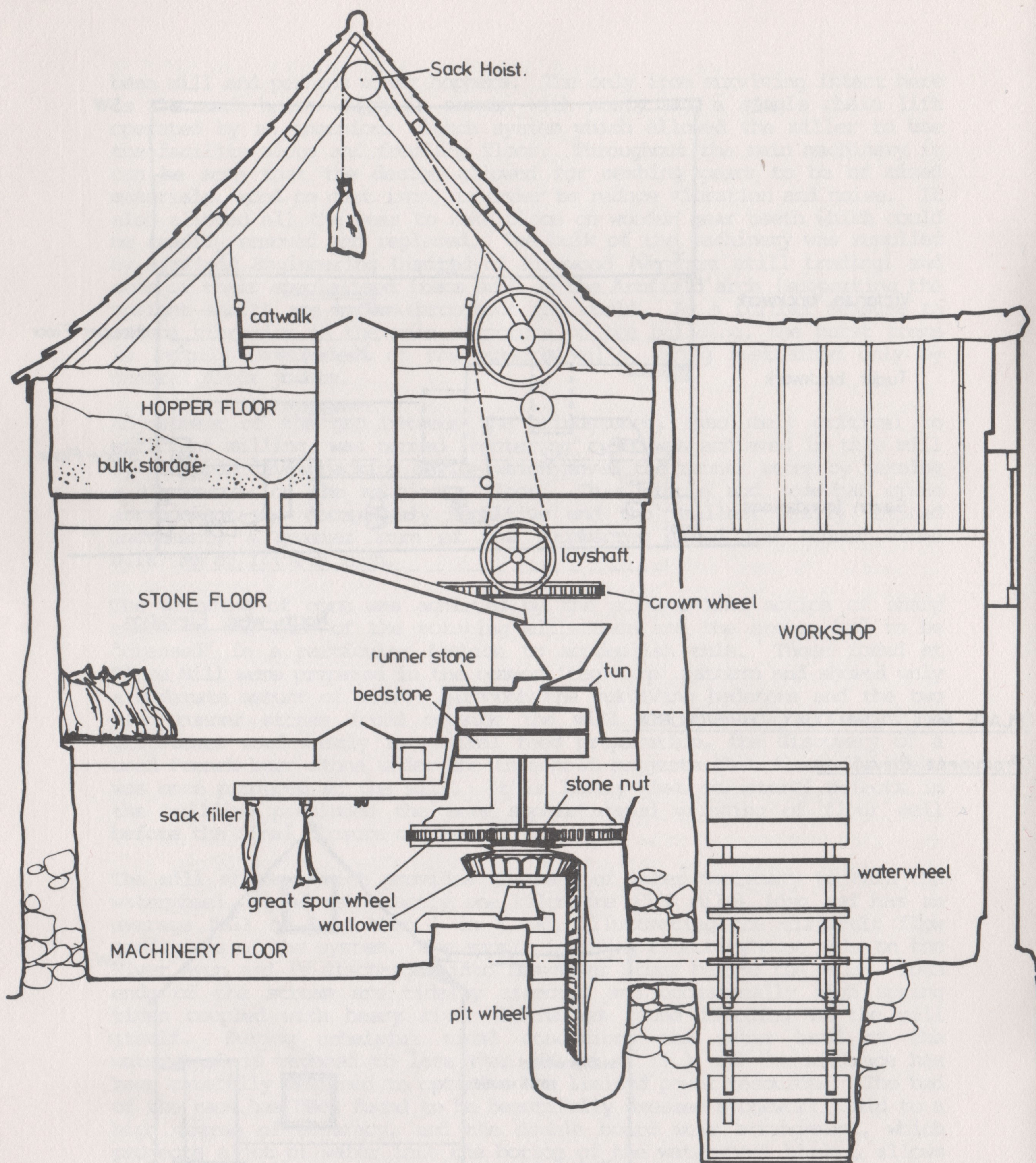
The mill stream, which provides the head of water necessary to turn the waterwheel, is almost exactly one kilometre (5/8 mile) long and has an average fall of less than 1 in 5,000, illustrating the difficult flow conditions of the system. The supply is taken from Brewhouse Hole on the River Avon and is discharged into the River Stour beside the mill. Both ends of the stream are tidally affected and occasionally high spring tides coupled with heavy river discharges cause flooding in the mill itself. During unhelpful tidal conditions the water head at the waterwheel is reduced to less than 300 mm (1 ft.) and the millrace has been carefully designed to optimise the limited power resources. The bed of the race has been found to be beautifully dressed stonework, laid to a high degree of accuracy, and the double board weir arrangement, which projects a jet of water into the bottom of the waterwheel blades, allows the mill to operate at almost all states of the tide.



PLACE MILL, TOWN QUAY, CHRISTCHURCH

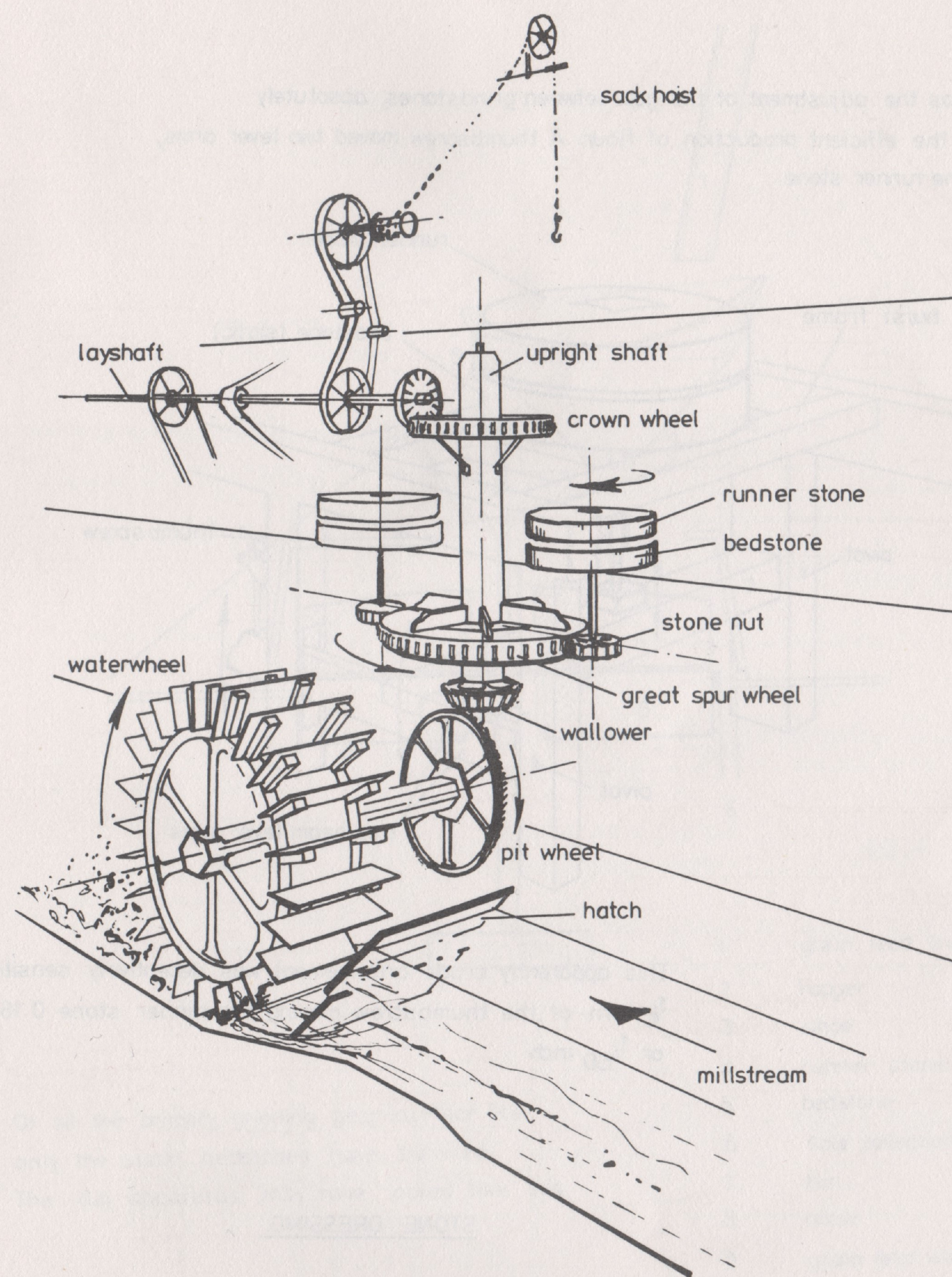
Prominent Elevations





HOW THE MILL WORKED.

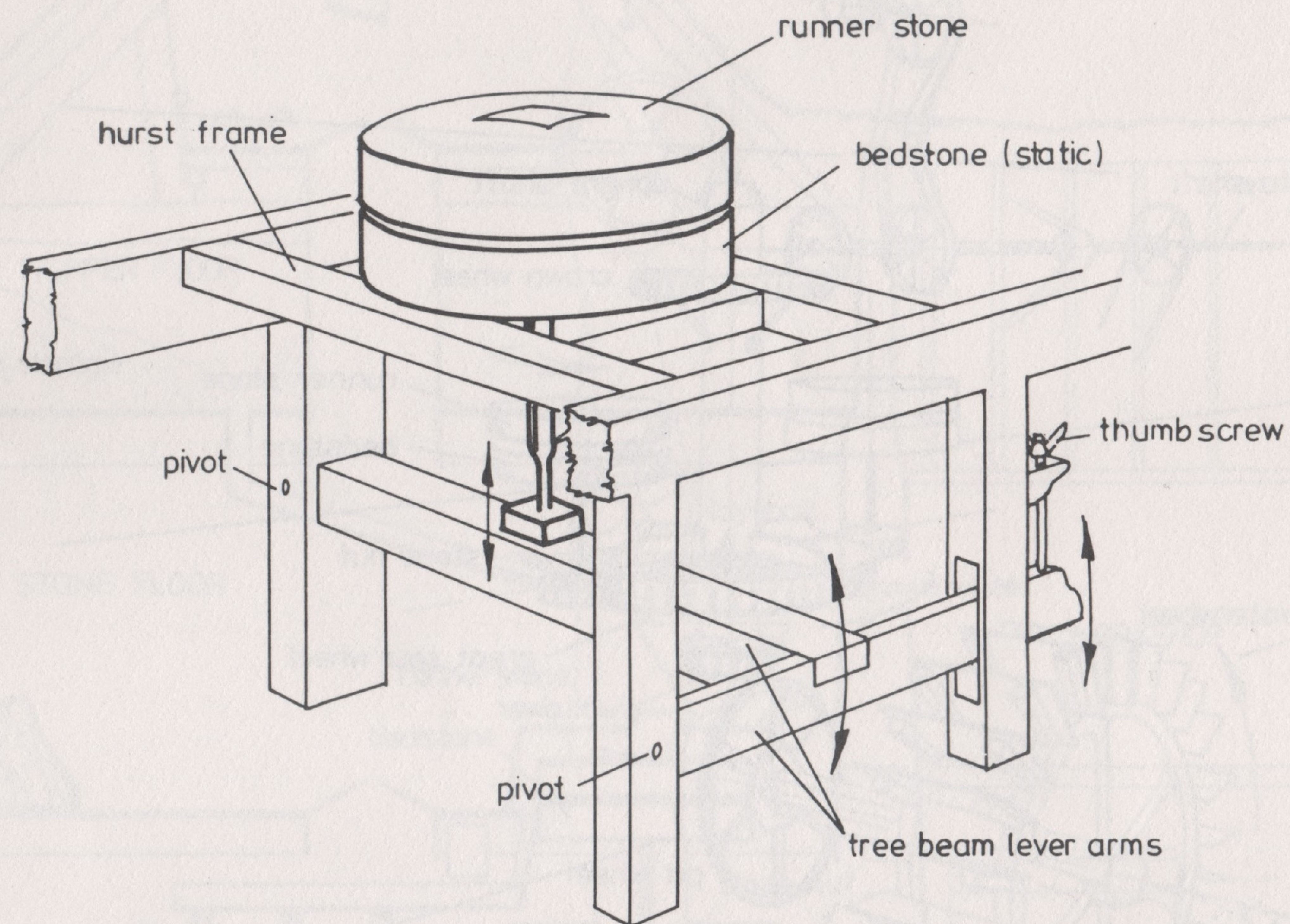
Grain delivered to the mill by cart was hoisted to the hoppers for bulk storage using the sack hoist. It was fed to the grindstones, largely by gravity, through wooden or canvas trunking. After grinding, flour was collected into a horizontal trough and fed by archimedian screw into sacks, which were then hoisted to the first floor for collection. Other processes, such as cleansing or mixing may have taken place prior to grinding.



Power was derived from the waterwheel and transmitted via the pit wheel, wallower, great spur wheel and stone nut to the runner stone. The bedstone was static. The upright shaft, crown wheel and layshaft transmitted power to ancillary machinery. The flow of water to the waterwheel could be controlled by hatch boards to give optimum power without wastage of the precious water.

TENTERING

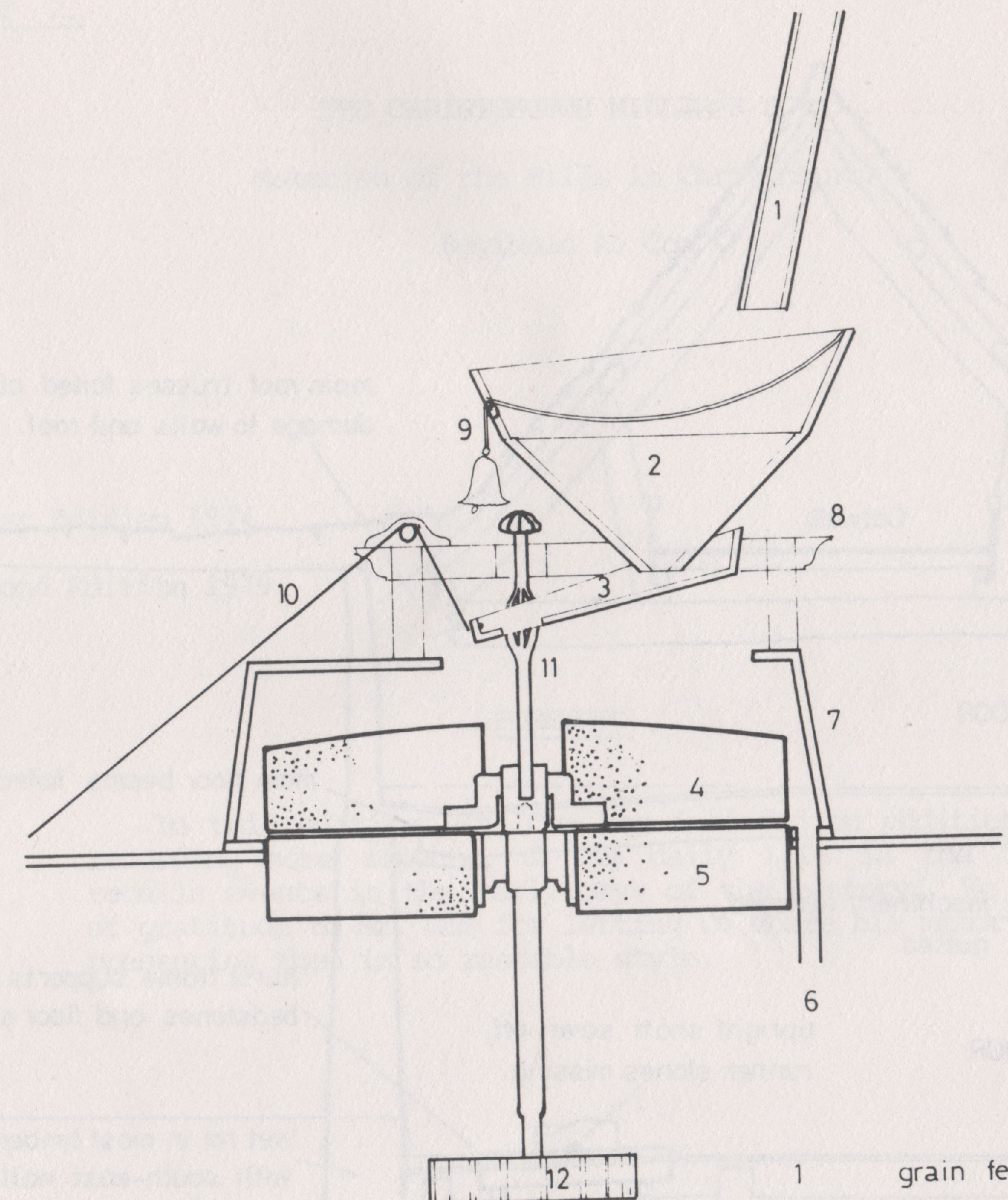
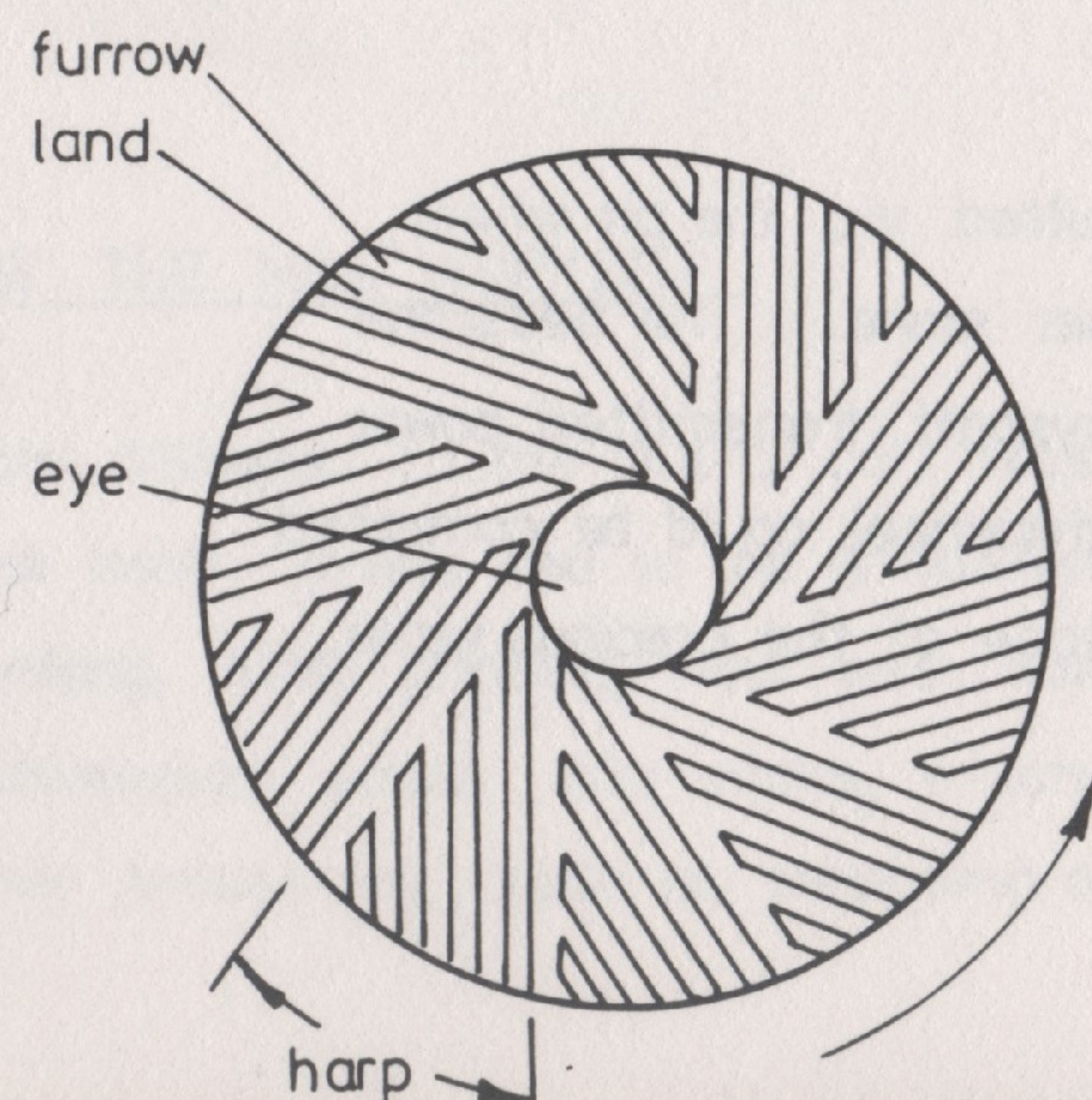
Tentering was the adjustment of the gap between grindstones, absolutely critical for the efficient production of flour. A thumbscrew moved two lever arms, adjusting the runner stone.



This apparently crude arrangement was deceptively sensitive; $\frac{1}{4}$ turn of the thumbscrew moving the runner stone 0.167mm or $\frac{1}{150}$ inch

STONE DRESSING.

Stones were dressed to produce the sharp edges needed for the scissor-like grinding process. Furrows, tapering from nothing to 12mm deep at the rim, were cut using 'picks' and 'mill-bills' to the set pattern illustrated. Dressing was a difficult and occasionally hazardous operation requiring a high degree of skill.



- | | |
|----|-------------------------|
| 1 | grain feed trunking |
| 2 | hopper |
| 3 | shoe |
| 4 | runner stone |
| 5 | bedstone |
| 6 | flour collection |
| 7 | tun |
| 8 | horse |
| 9 | grain feed warning bell |
| 10 | crook string |
| 11 | damsel |
| 12 | stone nut |

Of all the primary grinding gear in Place Mill only the static bedstones have survived. The full apparatus may have looked like this.

GRINDING GEAR.

PART 2.

THE CHRISTCHURCH MILLER'S BOY

Memories of the Mills in Christchurch

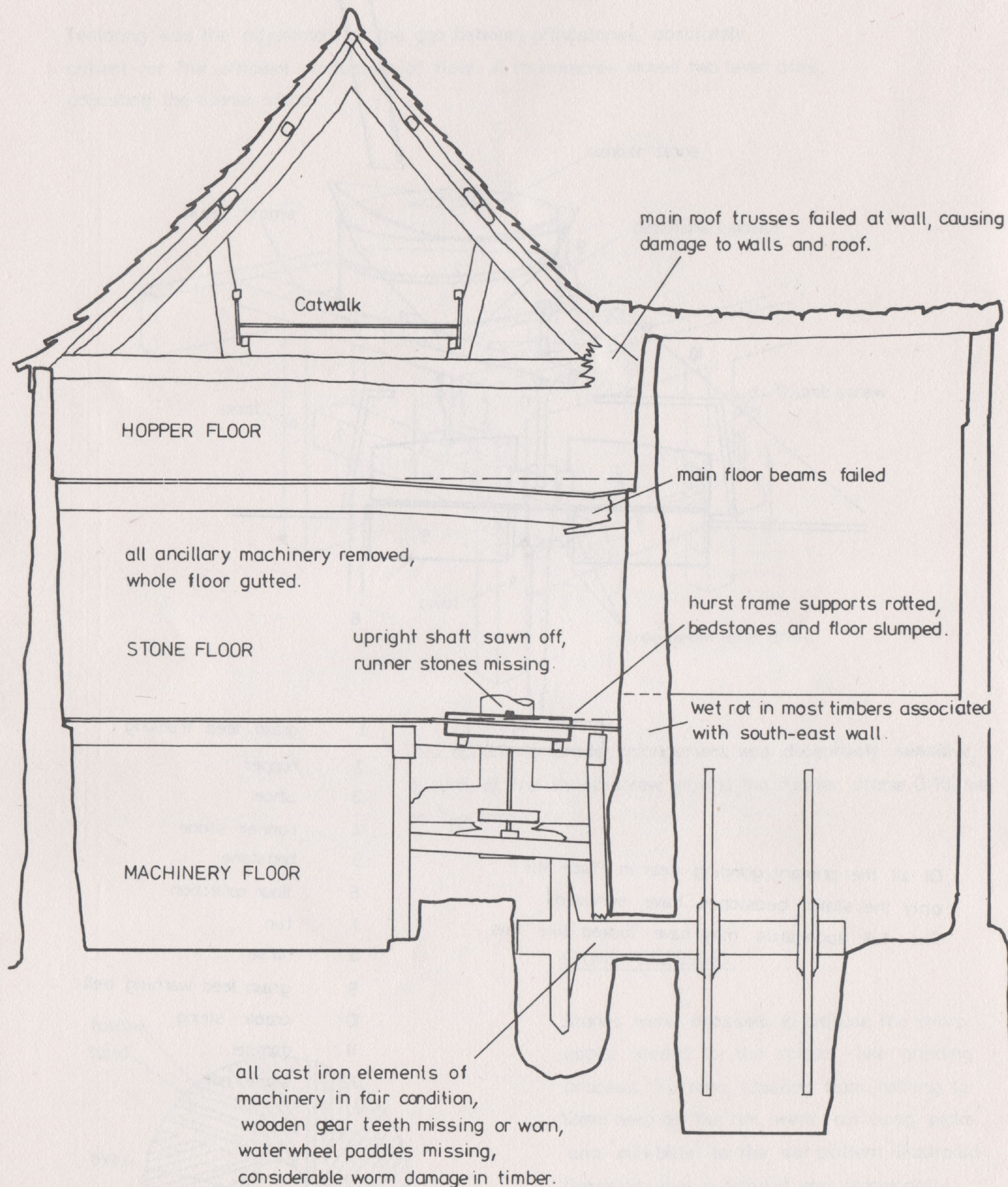
Reginald A. Cox

First Edition 1974

Second Edition 1979

FOREWORD

In this edition, Mr. Cox has included an additional section recording some aspects of the daily life in the town as he recalls events in the early days of the century. We owe a debt of gratitude to Mr. Cox for letting us share his memories and for presenting them in so readable style.



INTRODUCTION

The town of Christchurch is situated between two rivers - the Hampshire Avon and the Dorset Stour. At its southernmost tip these rivers converge to form the waters of Christchurch Harbour, which in its turn flows through the narrow mouth at Mudeford and enters the sea of Christchurch Bay. On a hill, overlooking the ruins of the Norman Castle and dominating the quay and harbour, stands the ancient Priory Church. The church is of cathedral size and its historic data has been well recorded. It is sufficient for me to mention that the Nave was completed in 1150, and so establish that this is indeed an area of historical antiquity.

Under the shadow of the Priory there still stands a red bricked cottage; the water mill and the quay. The interest is that I was born in this cottage in 1901, the youngest son of Andrew Cox, who was the miller at the mill from 1878 until 1908. My recollections of the mill and quay will, of necessity, have reference to my father as the central character. I am indebted to the secretary of "The Society for the Protection of Ancient Buildings" and the Town Clerk's Department of the Borough of Christchurch for their kindness in researching such few references to Place Mill as they have on record.

Brighton, Sussex.

1. PLACE MILL

There is very little recorded history of this water mill. The only facts I have been able to research are that it was mentioned in the Domesday Book Survey, which was completed in 1086. It was one of the 172 watermills listed in Hampshire at that date. History suggests that it was the monastery mill for the monks of the Priory Church. C.M. Ellis, in his "Gazetteer of Mills in Hampshire" merely states that it is of "Two storey brick and stone built, with a tile roof". Research at the Druitt Library, Christchurch, resulted in one extract from "Christchurch" by Marjorie P. Lane: "The old mill is of Saxon foundation, but the upper part was repaired and enlarged in the 16th century. It belonged to the Monastery and was valued at 30 shillings in the Domesday Survey. The stream was widened 10 feet in 1815, the cost being borne by Sir George Tapps-Gervis". According to a reference by a local historian - the late Mr. Herbert Druitt - it was partially destroyed by fire in 1400.

My father's life as a miller started when he was a boy working with his father at the Corfe Mullen water mill in Dorset. He took the post at Place Mill in Christchurch in 1878. It was owned by the local council and leased to Messrs. Cuff & Son, Corn and Forage Merchants, Christchurch. This firm no longer exists. I was the youngest child of a large family, my brothers and sisters were all grown up and as our cottage was the only habitation on the quay I was rather isolated from playmates of my own age. So what was more natural than that I was carted off by my father and taken down to the mill, so that he could keep his eye on me and get me out of mother's way! I had several years of this close association with the daily life of the mill and as I grew older was quite useful as an unpaid assistant.

My recollections of those days are very clear. To portray the mill in its rightful setting I must first mention the mill stream - the motive power. The river Avon flows south from Salisbury, through Ringwood and under the bridges at Purewell, Christchurch. At Purewell the main river goes down to form the eastern arm of the harbour while the mill stream - its volume controlled by sluice gates - circles the foot of the Castle ruins and the Priory until it reaches the mill on the corner of the Quay.

The mill is built over the water. It had a stone paved ground floor and two upper floors connected by wooden ladders. The ceilings were low; not more than 6 feet high, supported and strutted by heavy beams, and covered with various sizes of flanged wheels, each with its wide, flat leather driving belt. The whole covered with the inevitable flour dust and the occasional cobweb. The entrances to these old flour mills were often paved with worn-out grind stones, too thin for further use, and Place Mill was no exception. There was one sunk into the ground at the door.

In the days that I am describing it was all horse drawn transport. I can hear now the clatter of hooves and the rumble of wheels as the carts and wagons arrived at the door. All kinds of grain was brought for grinding or crushing. Large consignments from farmers, or the odd sack and few bushels from the small man or the forage merchant. There was wheat for grinding into flour, barley and oats into meal, horse beans and maize to be cracked for animal feed, and sometimes malted barley to be crushed for brewing purposes - grist for the mill indeed! Sometimes there was the odd truss or two of hay to be cut into chaff.

As a child I could not resist eating horse beans and many times a bout of sickness disclosed the cause. Then I was in trouble for eating them - and father for allowing me to! I was particularly partial to malt and when it was available I ate it by the handful.

The sacks of grain were wheeled on sack trucks into the ground floor. In the centre of the floor was a chain hoist which passed through hinged trap-doors in the ceilings of the two upper floors. The chain was looped round the neck of the sack, the gear engaged, and up it went. The sounds of the trap falling back indicated when it had reached the required floor and the hoist was stopped.

All the grain for milling went to the top floor where it was emptied into large bins which lined the walls. These, of course, had outlet holes at the bottom. When the mill was working I used to look over the top of them and watch the walls of grain gradually fall to the centre - like a slow avalanche creeping down the sides of a mountain! When it was getting low in the bin father would climb over and down a ladder, and shovel it into the centre with a wooden shovel. From there the grain ran through a chute to the floor below, which houses the mill stones and crushing wheels. These wooden shovels were used for all the mixing of horse feeds and pig meals.

The picture then is of a three storeyed building with connecting flights of wooden ladders. The system of working was that grain went by gravity feed from the top floor to the machines on the floor below, and the finished product collected on the ground floor.

The motive power was, of course, the water wheel. This was reached through a small door and climbing down a short open ladder over the rushing stream. The wheel house was a terrifying place for me when the wheel was working. Although it filled me with awe it drew me like a magnet when the door was opened for inspection. The thunder of the water, the beating of the paddles, the turmoil of water being thrown about like a raging sea; the elements gone mad in the greatest tempest I had ever seen! That's how it seemed to my young eyes.

Father knew the interpretation of any unusual sound coming from the machinery. A banging or knocking from the wheel house usually indicated that a paddle was loose or broken - they were made of wood. If this was the case it meant a dash to the sluice gates outside to lower the hatches, thus stopping the water from flowing into the wheel by diverting it into a side stream which flowed directly into the harbour. There was an uncanny silence as the heart of the mill ceased to throb and the wheels came to a stop with a last low groan, as my father went to his workshop on the first floor to prepare materials for a repair. I was always frightened when he climbed on to the big wheel, thinking he might fall into the water or that the wheel would turn whilst he was on it.

The main power drive was a large wooden cogged wheel in the centre of the ground floor. All the gear-wheels were wooden cogged ones, which transmitted the power to the overhead shafting. There were wheels and leather driving belts everywhere. If a belt broke it was rivetted together again; if one got too dry and started to slip the remedy was simple and effective - a dab with a brush kept in a can of castor oil.

The 'modus operandi' of grinding corn by means of stones - from the hand quern to the large millstones - is well known and needs little description from me. But the manner in which the stones in the mill were

re-surfaced or "dressed" may not be so well-known, and in order that the reader may more easily follow my description of this lost art, it is necessary for me to briefly mention the principles on which mill stones operate.

The stones are in pairs, a fixed lower one and a rotating upper one. There is a hole in the centre called the "eye". Both have channels cut into them in a special pattern, radiating from the centre to the outside edge. A vertical driving shaft is fixed into the centre of the upper one. The grain is fed into the centre and the rotating of the upper one grinds and extrudes the flour at the periphery, where it is collected. The whole unit is cased in with a wooden cover.

All the time the milling was in progress my father would go from chute to chute examining the product, feeling and rubbing it between his thumb and fingers and making adjustments until he was satisfied with the quality. I can picture him now, standing over a nearly filled sack with some tie-strings between his teeth, ready to tie up the sack.

From time to time the stones have to be dressed - re-surfaced and recut. My father was an expert in this old craft and was often in demand to do this work for other millers. I have many times watched him at work. The upper stone was lifted by block and tackle. A length of hardwood timber was prepared for use as a straight-edge. One edge of this was coated with a mixture of water and red ochre and rubbed over the surface of the stone. This, of course, marked all the high spots which were then pecked level with a chisel edged hammer; a bag of bran being used as an elbow rest and fulcrum. This process was repeated until the whole surface was level and even. Next, the grooves were recut to the required depth, using a stone mason's hammer and chisel.

This was a dusty, choking job. Gauze goggles were worn to protect the eyes from flying particles of steel and stone - eye injuries were frequent. Whenever I was watching, I was made to stand well back from the scene of operations. I can recall now, watching the sparks shooting from the chisel and the peculiar sour smell of hot steel and stone.

Grain for crushing only, such as oats, beans, maize and malted barley, was dealt with by the most simple means; being fed between the surfaces of two wide crushing wheels. The clearance between them was adjustable. For instance, they were set wider apart for maize, which is a very hard grain and if not to be made into meal has only to be cracked.

I remember the chaff cutter - like a long open box with a roller at the business end. The hay was laid in the box and pushed under the roller. The cutters were two large blades fixed like spokes in a wheel and driven by a belt from the shafting overhead.

This was a small mill operated by one man who was responsible not only for working it but also for the repair and maintenance of every working part in it - large or small. My father had spent his whole life in water mills and was consequently a very skilled man with tools - an expert in wood or metal. His workshop was a place of delight for an active and inquisitive boy like me, and I liked being around when any work was being done.

In addition to the large carpenter's bench there was a small forge in one corner with bellows which I could operate. In another corner was a grindstone with a water-drip can hanging over it - I was also very useful

in turning this! Hanging on the walls was a set of huge hand-augers and templates of wheel sections of various sizes. Most of the carpentry was in heavy timber, such as new paddles for the wheel and structural timbers, and repairs to wheels and cogs. The forge was used for all sorts of ironwork jobs. There seemed to be many uses for lead. I remember being fascinated by watching the silvery liquid floating in the ladle on the forge fire.

I remember another thing which father kept in his workshop and which was of great interest to me - his shot-gun. It was an old muzzle loading percussion cap fowling piece, with a ramrod. I used to watch him make up his own charges with black powder, wads, and shot. He even made his own shot by dropping molten lead into cold water. When he had time for recreation it was spent with his fishermen friends or duck shooting from our flat bottomed punt on the marches of the harbour backwater down near Warren Head - which was our local name for Hengistbury Head. He was keen on wild fowling and we had one of his trophies in a glass case at home. It was a white swallow - an albino freak. I am afraid there was no protection for wild birds in those days. Most of our friends and relatives had caged birds of wild species such as Bullfinches and Linnets.

I have often been asked what lighting was used for after-dark at the Mill. This may be a suitable place in my story to answer that. It was the same as we used at home - an oil lamp or candles. Mostly the latter, and the cheapest ones were made of tallow, they were stuck on pieces of wood for moving about.

Youthful minds tend to retain more about the happy days than the bad ones, but I don't forget that the Mill was a perishing cold place in the winter. There was no heat of any sort. The only place for a warm-up was a fire on the forge in the workshop. Well wrapped up against the cold father would keep warm by working hard but I was less active and would go outside and play with the snow until hands and feet were frozen so much I cried. I was then sent home, and this happened many times.

These were the bad old days in regard to working conditions. The "Factory and Workshop Act" had only just been introduced - in 1901 - and its provisions were mainly to regulate the employment of young persons. There was nothing to protect the adult worker from the exploitation by any employer who demanded long hours for low wages; nothing to provide safeguards for the worker's health or safety in his working environment.

Perhaps exploitation is too strong a term, maybe it was just the normal custom of those times! My father always suffered from the millers' occupational complaint - dust on the lungs. His working hours were from 6 am to 6 pm, six days a week - actually he left a bit earlier on Saturdays in order to walk to town to collect his week's wages.

The old mill, in its picturesque setting on the quay, was a popular subject for artists. Hardly a fine day passed without seeing a stool, easel and canvas set up on the grass.

Alas time began to take its toll on the fabric of the mill. The building was surveyed in 1908 and weaknesses were discovered which in the opinion of experts made it unsafe to withstand the continued vibration of working machinery - it was condemned! This coincided with the decision of the lessees that it was no longer an economic proposition to continue to work it; they could no longer compete with the advent of the modern rolling mill.

So it ceased its active life.

2. THE MILL STREAM

As the wheel is the "engine" of a mill, so the water is the "fuel" and the hatches in the stream the control valves. The stream, therefore, had to be watched in all its moods. The weather, the tides, and the effects of floods and droughts on the level of the water had to be watched daily if the speed of the machinery was to be kept as constant as possible. Even then there was variation. With a good head of water everything would race away merrily; in times of drought, and the river unusually low, the wheels turned very slowly, as though under protest at having to move at all!

The attention was unceasing. At any time of the day or night, in sudden storm or tempest, the miller would have to turn out and go to the main hatches and adjust the amount of water entering from the main river, or the mill could be flooded.

When the weeds had grown to an extent as to slow up the flow of water, they had to be cut out at the roots, and I looked forward with pleasurable excitement to the annual weed-cutting event. In preparation for this my father would have been spending his spare time in the workshop sharpening the weed cutting blades. These were large and heavy steel plates strung together on a rope, like a string of modern razor blades.

On the arranged day the mill would be shut down and the flat bottomed punt launched down-stream. Father was the skipper and I was the passenger. Two local men were engaged as helpers and they took up their positions on each bank of the stream. They walked slowly along pulling the rope backwards and forwards with a sawing action. The heavy blades lay on the bed of the stream and cut the weeds at the roots, which then, assisted by father with a pitch-fork, floated down-stream and piled up against the weir in front of the mill. Operations were suspended at intervals to go back and clear them away.

The hatches no longer exist. They were of all wood construction operated by top rollers, chains and ratchets, and were raised and lowered by means of Tommy-bars inserted in holes in the rollers. The mill was flooded at various times in its history. There are still marks on the inside walls recording notable high flooding levels but the dates are no longer decipherable.

3. THE QUAY

These recollections of the mill and its water supply would not be complete without a brief description of its environment in my early days - the Quay. At the beginning of this century it was just an expanse of grass-land and meadow, with our cottage the only habitation. From the windows I had an uninterrupted view of the western side of the quay, where the River Stour, after passing under the bridges at Iford and Tuckton, formed the deep water berth.

Opposite the side of the quay was a large stone-built warehouse, known to us locally as the "coal house", so called because a lot of the trade was in coal brought up from the sea in barges. In those days there was quite a lot of small coastal traffic, mostly sailing ships. The whole place had the appearance of a busy little seafaring port. I remember one of the last of the sailing barges - the old "Charlotte". She was quite famous locally and most certainly must not be left out of any history

of Christchurch harbour. Her black painted hull and flying sails was a sight to delight the eye of a small boy like me. Her master was Captain Dickie Selwood, a well-known and popular character who was often a visitor to our cottage.

Another activity of the quay which I remember very well was the visits of the French onion boats with a whole cargo of onions. They would tie up opposite the coal house and use the warehouse for stringing the onions up. I think the boats must have been family owned as there were so many people on board, including women and children. And they all brought bicycles with them! Their cargoes were not consignments for anyone, but were peddled around by everyone on board. They would set off each day with strings of onions draped all over their machines, to call on housewives for miles around the district. Onions seemed to be much more a staple part of the ordinary people's diet in those days. These French ones were good and cheap and everybody took the opportunity to lay in stocks that would last until the next visit. The boats stayed at the quay until they were sold out, and I liked to walk over and watch the shipboard life; the children playing on deck, meals being prepared, and the washing hanging on the rigging.

There was a busy fishing community there at that time, getting their sole livelihood from this occupation. The sea was in easy reach and the harbour a safe haven. Some families had been fishermen for generations. The descendants of one family are still there but have abandoned the fishing for the pleasure boat hire business. Of course, Christchurch salmon have always been famous and the salmon netting made up a goodly part of their income - both in and out of season! From what I have been told there were as many poached as were caught legally, entailing a never ending game of hide-and-seek with the water bailiffs. Many years ago I was told, by an ancient inhabitant who took part, that the old mill was once used for the secret auctioning of poached salmon - on Sunday mornings! Visitors can still watch salmon netting taking place in the "run" at Mudeford. In common with every secluded sea inlet round our coast Christchurch has its legends of old time smuggling, of brandy, wines and tobacco. And some of it took place not all that long ago!

Time has marched on and the era I have described no longer exists. The avalanche of progress has engulfed the river banks and meadows with its tentacles of bricks and concrete and its emporiums for the tourist.

HISTORIC NOTE

During the latest revision of this booklet I have come across a reference to Christchurch Harbour which suggests its antiquity goes back to almost the beginning of time itself - the Roman invasion of A.D.43. Barry Cunliffe in his exhaustive study of the archaeology of Britain entitled "The Ages of Britain" states, in reference to the Roman occupation of southern France. "The first sign we have is that Roman wine was beginning to reach southern Britain, carried in durable wine "amphorae" through ports like Hengistbury."

4. MEMORIES OF CHRISTCHURCH

The story of my boyhood days at Place Mill and the Quay was written for the purpose of filling a gap in local historical records. My only qualification is of being the last survivor of a large family born and living there during the period 1879 to 1908, and possibly the only person left who actually worked in the two Christchurch mills.

Christchurch, at the beginning of this century, must have been similar to any other small riverside country town of the time in its customs and way of life - a period well recorded by many writers. My recollections are offered for local interest, through the eyes of a small boy and coloured by the background of family life in the humble cottage on the quay.

We lived in the shadow of the great Priory Church. It dominated our life in a way. It was always there to be seen, you couldn't forget it for long without the sound of the bells reminding you that it was still there, either ringing for joy or just tolling for services or funerals. But I suppose that applies to anyone who lives near a church. All the men of my family were associated with some sort of service to the church. My father was bellringer, sidesman and Sunday School teacher, and both my brothers were in the choir. As a family we had great affection for this fine old building. After all, we were all christened there, all nine of us, and many married there, including myself in later years. One of the first fairy tales I can remember was being told the legend of the miraculous beam in the building of the church and the mysterious Carpenter. My father being a bellringer, I realised at an early age that a lot of mathematics was involved in the art of campanology, as I remember seeing him on many evenings, with the aid of the oil lamp, poring over sheets of paper covered with bell numbers to work out various peals, which he would memorise. One naturally associates church with Sundays. Our discipline in the home was of the Victorian era - emphasised on the Sabbath. For me it was a day of penance - church, best clothes, polished boots, no running about, playing or whistling and in the evening being made to sit in the parlour with the rest of the family singing hymns to the accompaniment of our harmonium, the one with the squeaky pedals.

As a child I always dreaded being "processed" and made to go with my father to morning services, for some reason the big church frightened me and I have never forgotten one occasion, although I could not have been more than six years old. In those days the Nave of the Priory was filled with oak pews, each with a small door by which one entered from the wide central aisle. As a sidesman, my father had a reserved one which was marked by a staff with an embellished top to it. At the appointed time in the service for taking the collection he would give me a peppermint sweet to keep me quiet, then leave me and close the door, whilst he went round with the velvet collecting bag and finally took the offering to the altar rails. Left alone in the closed pen, and that vast expanse of nave, I was panic-stricken. I climbed out and ran crying down the aisle, to be grabbed by some good soul and comforted until father returned. I understand that this performance brought me some notoriety in church circles and embarrassment to my parents for some time!

At school age I attended an infants school in a road not far from our home. I don't think I could have liked going to school as I can't recall very much about it, just that all our writing was done on slates with slate pencils and that I was taught how to lace up my boots. We were given strips of leather with eyelet holes in them and shown how to tie them together. Since we all wore laced boots, I suppose it was a useful first lesson.

At home the highlight of the week for me was being taken to do the weekly shopping. It was always on Saturdays because that was the day father was paid for his week's work. It was also always late in the day because we had to wait until he had been to collect his wages in the late afternoon. I remember our grocer's shop was called "Lanes" and was in the street which led up to the church gates. It was an Aladdin's Cave to me.

All the provisions were on display in bulk. Nothing was pre-packed as it is today. Everything was open to see, handle or even taste before purchase and wrapping. Flour, sugar, rice, oatmeal, etc was in open sacks. My young sister and I always kept our eye open for the barrel of broken biscuits, they were sometimes our Sunday treat as we could get a large bag of them for a penny. Whole cheeses were on the shelves and butter and lard was cut out of the tubs and put on the shelves in one big block. Mother would never buy butter without tasting it for flavour and amount of salt. Father was the cheese specialist and would never buy without sampling it - if necessary every cheese in stock. This was the common practice at the time and shopkeepers expected and accepted this condition of sale. Of course the butter-pats were in daily use, and I was always fascinated by seeing them used, they continued to be used until the 1930's when the supermarkets and pre-packaging were introduced. We shall never see them again, except in museums.

Saturday was the wages day for all manual workers so the High Street teemed with people. Shops kept open until a late hour. For the poor and thrifty, just before closing time was the time for cheap bargains, especially at the butchers. With no such thing as refrigeration and ice boxes he was anxious to clear his stock at "give-away" prices if necessary before shutting up shop. A lot of them stood on the pavement and auctioned the last joints.

There was no Health Service as we know it today. Doctors and medicines had to be paid for so, in the poorer families, home remedies were widely used, and only if all else failed was the doctor consulted. The unpleasant treatments are the ones that remain in my memory. The hot mustard poultices that made me scream; the plasters of brown paper soaked in vinegar and sprinkled with pepper, and the Flowers of Sulphur for sore throats. The latter was particularly unpleasant as the powder was put into a funnel of paper; you were made to open the mouth wide, and the contents of the spill were blown on the back of the throat. Then there was the weekly dose of Epsom Salts for everybody! Finally there was the regular seasonal ritual of wearing blocks of camphor round the neck in little flannel bags, to ward off winter colds, and in the Spring brimstone and treacle to "clear the blood". That was the only thing I liked! I do remember that ringworm was a common complaint amongst school children and the home remedy was painful - the affected skin was rubbed with a lump of common soda dipped in water.

Thinking of health matters reminds me of a common sight in those days, when all the traffic was horse-drawn, of seeing the road outside a house strewn with straw. This indicated that someone in the house was gravely ill, and the straw was put down to deaden the noise of passing wheels. In addition the door knocker would be tied down.

I remember the old Tuckton toll bridge, a stone structure which bridged the Stour from Southbourne to Christchurch. I believe I am right in saying that the toll was a half-penny per person and a half-penny per wheel of a vehicle. One of the tollkeepers was a close friend of the family and I recall being taken to see him on a Sunday. His name was Mr. Neeves. The tiny house at the Christchurch end of the bridge was like a little tower, I think it was one room up and one room down. He had a board with his name on it which he put up outside when on duty. This was the time of the early bicycles. I think my father must at some time have ridden the early type of "pennyfarthing" machine called a Velocipede, as I seem to recall seeing an old frame lying around somewhere. My earliest memory is seeing him riding an "ordinary" two wheel machine, very heavy, high handle-bars, fixed wheel drive and solid rubber tyres. He used to mount it by leaning it against our wooden garden fence. Bicycles were the only means of personal transport in those days.

Fortunately, at the time of writing this, the geography of the main approach from the Forest to Christchurch has escaped the ruthless hands of the planner and developer, it is the same as it was a hundred years ago. The quaint narrow Purewell Road, the two hump-backed old stone bridges, and the ruins of the Castle can still be seen, but, alas, the peaceful sound of the clip-clop of horses' hooves has been replaced by the roar and fumes of the motor car.

And now a last wander into the High Street, a leisurely stroll to watch the sights. A smartly trotting pony and trap, the slow plodding cart horses pulling heavy farm wagons or the brewer's dray, a wagonette with a load of people off to an outing.

A group of people enjoying the lively tunes of a barrel organ but really more interested in the antics of the monkey on the top. The Salvation Army band playing near the corn shop and then an odd looking group, in biblical robes and long hair, standing around one of their number preaching from an upturned box, who proved to be a religious sect calling themselves the Ishmaelites.

The only mechanical monster I ever saw was a steam traction engine, which everyone watched. The thing which gave us youngsters most fun was the horse-drawn water cart when the streets were washed down. We had great fun playing around that, getting as near to the spray as we could, and the driver playing games with us by putting his foot pedal down hard and drenching us.

So childish memories linger.

5. Return to Christchurch and Knapp Mill

The preceding chapters in this book are an account of my childhood memories of Christchurch in the early part of this century, when the old Mill on the Quay was still grinding corn.

It was originally written at the request of the Curator of the Red House Museum of Christchurch for their archives. I was later asked if I knew anything about the other old Mill in the town. They had no records of it; it no longer existed, and they could find no-one who had any knowledge of it working! It so happens that I worked there in my teens, before it was demolished. So, in describing this other Mill, I am writing another page of my life story. It has since been confirmed that I have the honour of being the last person still living who worked at both the Christchurch Mills.

In my childhood days my world extended only to the immediate surroundings of my home in the cottage on the quay, and the mill. Beyond that was unknown parts! It is true that I had heard the name Knapp Mill mentioned by my father and among the family circle, but it meant nothing to me and I had not the least idea where it was. And the fact that I would leave Christchurch and return again later was in the unknown and distant future.

To explain how it came about I must refer back to 1908, when the mill on the quay was shut down and my father, Andrew Cox, who had been the miller there for thirty years, had to leave his tied cottage and seek employment. He left the town and for the next eight years worked in modern rolling mills in Warwick and Somerset. I travelled with him and received the remainder of my schooling in these counties. We were in Somerset when the first world war broke out in 1914.

From then onwards there was a progressive disruption of industry and a shortage of manpower, and in 1916 my father received an offer to return to Christchurch and take charge of Knapp Mill. He had been wanting to get back for some time, for family reasons, and accepted the offer. That was how it happened that I returned to Christchurch at the age of fifteen. I left school at thirteen and had been working for two years.

I was excited at finding myself back in my home town and near some of my relatives. The war had been raging for two years, but until now I had been buried in the heart of rural Somerset and except for the sight of an occasional airplane I was hardly aware that there was a war on.

I stayed with a sister at Boscombe whilst father looked for somewhere to live in Christchurch. It was all very strange for me to be in a modern house. I had suddenly been uprooted from a primitive, rural, stone cottage in a small mining village which had no plumbing at all. No running water - we got it in buckets from a well - no drainage, no sinks, waste water was thrown on the garden, and an outside earth closet. Here I was in a house full of wonders! You even turned on a tap and got water, and a sink where the water vanished! And, wonder of all, a toilet that flushed with water, but why was there always some left in the bowl! I saw gas lighting for the first time and marvelled it was fatal to poke the match into when lighting.

My strong Somerset brogue was a source of great amusement to everyone. Neighbours were brought in just to hear me talk and it almost needed an interpreter for them to understand me.

My brother-in-law worked on the Tramways and I was given the news that they now ran to Christchurch over a new bridge at Tuckton.

We had found a house near Fairmile Road and, now that I was back in civilised parts, I realised at last that it was war-time. There was plenty of evidence around me and an occasional motor car to be seen. As I looked around the town I noticed that the old Christchurch Infirmary and workhouse had been turned into a hospital for war casualties, the roads were full of men in hospital blue and the uniforms of servicemen of all the nations under the British flag were in evidence everywhere. There was a lot of activity at the barracks. Christchurch had had a barracks for as long as I could remember - there is still a Barrack Road to perpetuate it. This was a war still fought with the aid of horses. A detachment of the Royal Horse Artillery was stationed there at this time, and training was taking place daily. These exercises could be watched by the passer-by from the road. There was also a bridging section of the Royal Engineers and, as the barrack field was bordered by the Stour, it was an ideal spot for training in bridge building.

For a lad just out of the seclusion of country lanes, all these sights were exciting and of great interest. My days of freedom to wander around were brief. As soon as we were settled in our new home attention was focussed on the need to find me a job. My father decided that I should work at Knapp Mill with him, and made the necessary arrangements. The hours of work were to be 6 am to 6 pm, Monday to Friday, and till 1 pm on Saturday, there was no reduction for boys! My wages were to be ten shillings a week - quite good!

So the morning came when I had to go to work. I was dragged out of bed at 5 am, in order to be at the mill by 6 o'clock. I was told to put on my oldest clothes and a cap, laced up my hob-nailed boots, had a bite of food, and set off with dad for our walk. I well remember that first early morning tramp down Mill Road.

Now the inside of a mill was not a strange place to me. I had visited my dad many times at his places of work, but always for short calls and away again. But this time was different and as I approached the prison-like building in the half light of dawn the thought that I had to go in and stay there to work filled me with apprehension and all sorts of fears. Especially so because such work as I had done so far since leaving school had been in the wide open spaces of the garden of a country manor. It was a two-floor building with tiny windows. I remember there was a chain hoist with a small projecting platform over the front entrance, to haul the sacks to the upper floor. It had been modernised by replacing water-wheel power with gas-engine power. And the mill stones had given way to rollers.

My first few days were spent in doing odd jobs; getting acclimatised, getting to know how things were done and going home dog tired! Soon I was given a job of definite responsibility. I was taught how to look after the engine. I had always been interested in anything mechanical - what boy isn't - so it was something I liked and was quick to learn. It gave me a feeling of being important and earning my money. After all, I thought, it was the life-blood of the mill and, with me keeping it going, the millers could get on with their skilled work without interruption.

As soon as I arrived each morning my first task was to get the engine started, no wheels would turn until I had. From that point of view, it is a wonder I was not made to get there before the others! As it was, I am sure that it was only the fact that dad got me up and out of the house with him that I even reached there on time in the mornings!

It was called a gas-producer plant. The first thing I had to do was rake out the furnace, light it with wood and anthracite coal, then turn the handle of the blower which fanned the fire until it blazed quickly, like a blacksmith's forge, and began to produce gas, which was registered on the dial of a pressure cylinder. When this was high enough the engine could be started and the mill was able to work. Once in motion the production of gas was automatic. After that I had to see that it kept going, by constant attention to stoking, pressure, oil and water.

The remainder of my day was taken up with general work of every kind, wherever I was needed. There were no conveyor belt systems in those days, everything had to be manhandled. I found myself taking off the sacks from the rollers, wheeling sacks about on sack trucks, helping to unload incoming grain, mixing meal for animal feeds with a wooden shovel. And no end to the sweeping up! Later on I used to help on the hoist and carry 1 1/4 cwt sacks about on my back. I remember father warned me not to but I wanted to be manly and do what the men did!

There was a full-time sack mender employed there and I was often called upon to help him on that dirty job. This was a task in which I had some skill - the circumstances of how I came to acquire this skill I will refer to in later paragraphs.

The rolling machines which had replaced the mill stones were compact sets of steel rollers and sifting screens, which produced flour and meal from

all kinds of grain. The product was no longer wholemeal stone-ground flour, but the modern variety of "refined" white. The bran and wheat-germ could be extracted according to how white the end product was to be. The wheat-germ part was called "sharps" and apparently its nutritional value had not been fully recognised at that time, as it was the main ingredient in pig-meal!

There was a war on and a shortage of grain and every kind of cereal foodstuff. Everything was rationed, including flour. We were lucky in our household as father used occasionally to bring home some extras in the way of flour, oatmeal and maize meal. The latter we used to make milk pudding, but I remember it was not very nice, it gave me tummy trouble and diarrhoea.

Animal foodstuffs were scarce and there was a lot of adulteration in the feeds. I remember that at the mill all sorts of things were added to pig meal to make up weight and bulk. At one time we were mixing in some kind of fibre which looked like coconut husk - that is probably what it was.

We left our working clothes at the mill overnight, they got so saturated with flour dust one could not wear them home, and the nightly wash had to include our hair. It was too far to go home for meals, so we took food with us and, if the weather was fine, sat on an upturned oil barrel on the river bank to eat it. In cold weather it was a terribly cold place to be in. The only way to keep warm was to work hard and wrap oneself in an overcoat for meal breaks.

Earlier on I mentioned sack mending, the one job I was skilled at when I went to Knapp Mill. This is probably an old craft or occupation, which has died out. If there is any need for it to be done today it is certainly done by machine and in a modern factory. It may be of interest to anyone to know how I came to be involved in it. It is a small facet of my life-story, so I will digress for a moment and relate the circumstances. Sack mending was an essential job to be done in every mill. Wherever there was a mill there were sacks, and where sacks were used they got holes in them; and they had to be mended, by a skilled person. Some mills employed a full-time mender; usually an old man unable to do any more active work, sometimes a woman. In other mills they employed "outworkers" who did it in their homes.

I had my training in this when we lived in Somerset and I was still going to school. My father was a foreman in a mill there and there must have been a shortage of menders; or our family finances were in such a parlous state that they had to be augmented - I am sure it was the latter - because he either brought a bundle of sacks home with him or had them sent up by the farm wagon. There were two kinds of sack material, closely woven for flour and meal and coarser ones for corn. They got holes in them by various means, eaten by rats and mice, or torn and split in handling.

My father, my sister and I, used to sit in the stone-paved parlour of our country cottage in the evenings and do the mending. It was a dirty old job, the sacks were all used ones and full of the dust of their previous contents. So we had to put on our oldest clothes and wear bibbed sacking aprons, to do the sort of work that convicts do in prison! A special darning stitch is used and father soon taught my sister and me the art of doing it. Curved steel sack needles were used with thick jute string, working round the edges of the hole and 'filling in' in the centre. We were paid one penny per sack and took them as they came irrespective of the number of holes. Some would take a few minutes to do, others half an hour.

If we had a good evening we would repair two or three dozen in an evening. I think dad had a chance to do a bit of sorting before we got them and avoided the very bad ones but, even so, I have often done a hole six inches across in an otherwise good sack. Nowadays, of course, sacks are of disposable synthetic material. But these were the "good old days". More like Dickensian slavery!

Reflecting back on this period of working at Knapp Mill, I think it was the most arduous and unpleasant of my life. The early morning start was torture for me. I was always half asleep when I got there. It was even worse when the year advanced into winter and the mornings were dark, cold and wet. The days were long and working conditions very bad. The dust was everywhere - you breathed it in with every breath. The fact that there had been some modernising of machinery made no lessening of the dust. The only difference that the replacement of the mill stones had made was the absence of the deep rumbling noise of the stones and the peculiar smell of hot stone, which I knew so well in the mill on the quay.

It only remains now for me to tell the story of how I left this employment. I was a strong lad for my age when I went there, but the confined working conditions, the heavy work and long hours, began to affect my health and I got very run down. Then came an incident when I had a mishap in the severe winter of 1917, just after my sixteenth birthday. It was a day in the middle of a very cold spell of wintry weather. There had been days of hard frosts and overnight we had a heavy fall of snow. At the rear of the mill, in the open air just beyond the engine house, open topped barrels had been sunk into the ground and were kept filled with water from the nearby river, for use with the engines. The overnight snow had completely obliterated them. On this particular morning I had finished my work in the engine-house and took a walk round to admire the view, when I stepped into one of these open butts and sank to my chest in icy water. I went into the mill where my father stripped off my wet clothes and covered me with coats and sacks. Then I waited, shivering with cold, until they were dried off in the engine house.

But the damage had been done. A few days later I was taken ill with congestion of the liver and jaundice. I was ill for many weeks and on recovery the doctor said I was not to go back to the mill to work. The job was too heavy and unsuitable for a lad of my age. Father had to agree! That ended my experience of Knapp Mill - and I had no regrets. I had still not yet lived in a house which had a bathroom!

AFTER KNAPP MILL

(Working on the Trams in World War I)

Preface

Since the publication of the second edition of my childhood memories of the two Mills and the town of Christchurch in olden days, several readers and interested people have asked me "What did you do after leaving Knapp Mill?". It was still in the same period of time, seventy years ago, and, as I have already revealed intimate details of my family life from youngster to teenager, a further recollection may be of interest. The year was 1917. I was sixteen years old. The bloodiest part of the War was still raging. The locality was full of troops in their distinctive uniforms from every part of our Empire, a large number of them in the blue uniform of the wounded. All the largest buildings had been turned into hospitals. Including the great Mont Dore hotel - which is now the Bournemouth Town Hall.

The towns were blacked out at night because of the Zeppelin air-ship raids. Although electricity was generated for the tramway system, homes and streets were lit by gas. The glass of the street lamps was painted a deep blue colour. The lamplighter still rode around on his bicycle with a long bamboo pole with a hook on the end of it to put them on and off. The main tramway office for signing on and off was at Lansdowne, Bournemouth. The main depot for them was in Southcote Road, Boscombe. The terminus at Poole was at the railway crossing gates near the station and at Christchurch they ended at Church street. For my own transport I bought the cheapest fixed-wheel bicycle I could find on hire-purchase - at a shilling or so per week.

TRAM CONDUCTOR - 1917

When I had recovered from my illness I had to look for work again. The drainage of manpower to the armed forces and other war work was beginning to be acutely felt and there was plenty of work for youths and women in occupations normally done by men and adults. Bournemouth Corporation Tramways were advertising for lads of sixteen or over for training as conductors. I made an application, had an interview and was accepted. As a learner I was given a week's training, in civilian clothes, with an experienced conductor. It was a short route running about three miles, from Lansdowne to Ashley Road, with only a few fare stages to learn. I passed a test given me by an inspector, was measured and fitted with a uniform, given a bell-punch harness, a money satchel and put on the duty list as a fully fledged conductor.

I was put on the same route as I had been trained on. On reporting for each turn of duty I had to sign on and was given a sealed box with the route number on it. Inside was a bell punch, tickets, way-bill and five shillings in small coins for change. Before starting work the first numbers of all tickets had to be entered on the way-bill.

There had been some German Zeppelin raids over England and for the first time in our history a form of blackout had been imposed. Street and vehicle lights were dimmed after dark. At night the electric lamps in the trams were dimmed with deep-blue shades which gave just enough dim light for people to move about but not enough for us to see tickets or money. So conductors were issued with electric torches which were strapped on the jacket, pointed downwards, and gave us sufficient light to work with.

It was tiring work running up and down the stairs all day long and after a while the short run I was on became quite monotonous, so many times did one travel backwards and forwards along the same streets.

The trolley arm had to be turned round and put on the other overhead wire at the end of each journey. This was the conductors job and was done with a long bamboo pole with a hook on the end. At night it was difficult to see the wire and the pulley wheel in the dark, especially if the head had got turned round the wrong way, if it had you had to master the knack of striking it on the wire until it was straight. And all the time the tram was in darkness and a hazard to other traffic - and your own person - in the black-out. Occasionally, if the driver took a bend too fast, the trolley would jump off the wire, bounce about, and of course the tram would stop.

The greatest bloomer for any conductor was to make the error of putting the arm back on the same wire at the turn-round point, because if you passed a tram travelling in the opposite direction the trolley heads would crash together and come off, stopping both vehicles. If the head of one was torn off you were in real trouble. The breakdown tram would have to be called out and the tram taken out of service - causing a complete disruption of services. This was a serious thing to happen and could lead to the dismissal of the conductor concerned.

Gradually I progressed to the longer routes, eventually being promoted to the most coveted one, the long main one, which paid top wage. This was the six mile trip from Poole to Christchurch, which was more interesting as one only did about four trips in a days shift. On this route I manned one of the famous "Dreadnought" trams, I believe the largest in use anywhere in the country. They were double-deckers and carried 75 seated passengers. It was a hard and responsible job with dozens of fare stages to learn. One was kept busy all the time, always on the move, continually up and down the stairs. It was a much more comfortable ride though as these big ones were smooth and steady running - not like the bouncing and bone-shaking small ones.

The method of accounting was the way-bill. At every fare stage you recorded the next number of all your tickets, so when an inspector got on he could tell if any passenger was over-riding his stage. The conductor was responsible for seeing that this did not happen, if a passenger was found without a ticket or over-riding, you were on the carpet.

When the track was wet or icy, sand was fed on to the track from chutes in front of the wheels. There were sand bins under the seat and the apparatus was operated by a foot pedal at the drivers end.

We had to keep a time-table but if we made good time and got to the terminus with time to spare we could have a smoke or a cup of tea before setting off on the return journey. At rush hours, when a load got on for a short stage there was the usual difficulty of collecting all the fares and a few got free rides.

A duty rota was issued every week and all experienced conductors got an occasional week of "reliefs". This only applied to those who knew all the routes and fare stages. I qualified in time. This entailed taking over any tram where the conductor was missing or ill, also jumping any tram with a load up, and taking the fares on the top deck, to help the conductor. Then getting off and doing the same with a following one - a sort of roving commission, which was a pleasant change.

You were pretty well loaded with equipment which got heavier as the day wore on. There was a heavy bell punch, clips of tickets, and a money bag which could only be lightened when you could find time to cash up some of it. There were inspectors we called "jumpers", they were the bane and fear of our existence. We always signalled a warning to one another when they were about. At the end of a duty we had to cash up and complete the paying-in sheet, hand in our box, and hope for the best! Shorts were deducted from our wages - this seemed to happen with extraordinary frequency to me! It was war-time and a lot of our passengers were soldiers of many lands, from Australia, New Zealand, Canada, India, and there were many coloured troops. At pub turn out times we had a lot of trouble which we could not cope with, the drunks would refuse to pay any fare and there was nothing a young lad like me could do about it. On reflection now, I don't blame them, they were fighting for us, away from their homes, and poorly paid. But it made it awkward for us conductors and we never knew what attitude the jumper would take over uncollected fares. With the poor lighting we had many foreign coins passed on to us - which we had to lose as a short.

It was important to have a good mate (driver). By working together you could make life much easier and smoother - in starting and stopping, with or without the bell signal - and you sometimes wanted some support with an argumentative or drunken customer!

As with any form of public transport today, the constant problem and worry was trying to keep to the time-table. If you once got late you would most likely be late all day. You would soon be picking up passengers waiting for the next tram and be over-loaded all the time, and your driver would get more and more bad tempered. When things got very bad we would drive through a few stops in order to make up some time - after making sure no-one wanted to get off - to the annoyance of fist-waving and vociferous, would be, passengers.

I am ashamed to say that I got the sack from this job - and all because of a girl. The one and only time I have had the sack in the whole of my life. I liked the girls and they seemed to like me - they would run after me! I was sixteen and quickly got a crush on any girl who caught my eye. I had black curly hair and they seemed to fall for me also. My fall from grace happened like this.....

At the Poole terminus we often had time to get a cup of tea, in a shop where there was a very attractive girl, her name was Ethel. Naturally I talked to her and we got very friendly. It ended up by me inviting her to come for a ride on my tram when I was next on Sunday duty. So dates were arranged and on the appointed day Ethel was at the terminus, all dolled up in her smashing best. I punched her a penny ticket and told her to go on the top deck and sit on the back seat. She would then travel all the way to Christchurch and back. Whenever the top deck became empty for a few minutes I would nip up and have a few minutes "canoodle" with her. If a jumper was about I would go up and punch her another ticket for the current fare stage, which would be in order when he made his check and got off again. This went on safely for some time, it was common practice among conductors for their families or special friends.

There was one young, newly promoted, inspector who was ambitious and was hated by everyone, the others were decent and would give you a warning if you did anything wrong and you did not offend again. But this one was different, he must have been suspicious, or someone had split on me and he was sneaky. One day he boarded the tram at the driver's end and I didn't see him. He went straight to Ethel on the back seat, she had an

expired ticket - and I was caught! He said he would report me and the next day I was ordered to report to the General Manager.

The Manager had a reputation of being a hard martinet and he sacked me on the spot. I was absolutely shocked and ashamed. Everybody on the trams did this sort of thing for their friends and relatives and if soldiers refused to pay they got free rides - that's how my mind worked - to save my own conscience I suppose. I did not think I had committed a crime that warranted instant dismissal - I thought I should have had a warning for a first offence. I had fallen foul of the wrong inspector, any of the others would have given me a warning! All my mates were sympathetic and I thought I had been treated harshly, but there you are, it was a form of dishonesty and as so much of it was going on I was the unlucky one to be made an example of. It was another lesson in life for me.

Well, I think I was more upset over this than over anything that had happened in my life so far, morals were still important to me at that age and I still did not consider that I was a thief. But that was it, I had been sacked for dishonesty and I still had to go home and face the music there - to tell them I had got the sack and had to hand in my uniform. I can't remember the reaction there, it could not have been too bad or I should have a stronger recollection of it. Perhaps I was too upset and they were too surprised to do anything but accept the fact - on the principle that it was no good crying over spilt milk! Anyhow, I was out of work!

And that was the end of seeing my first girl friend again. Women !!!!

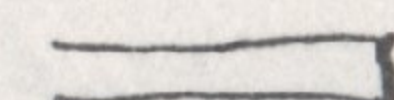
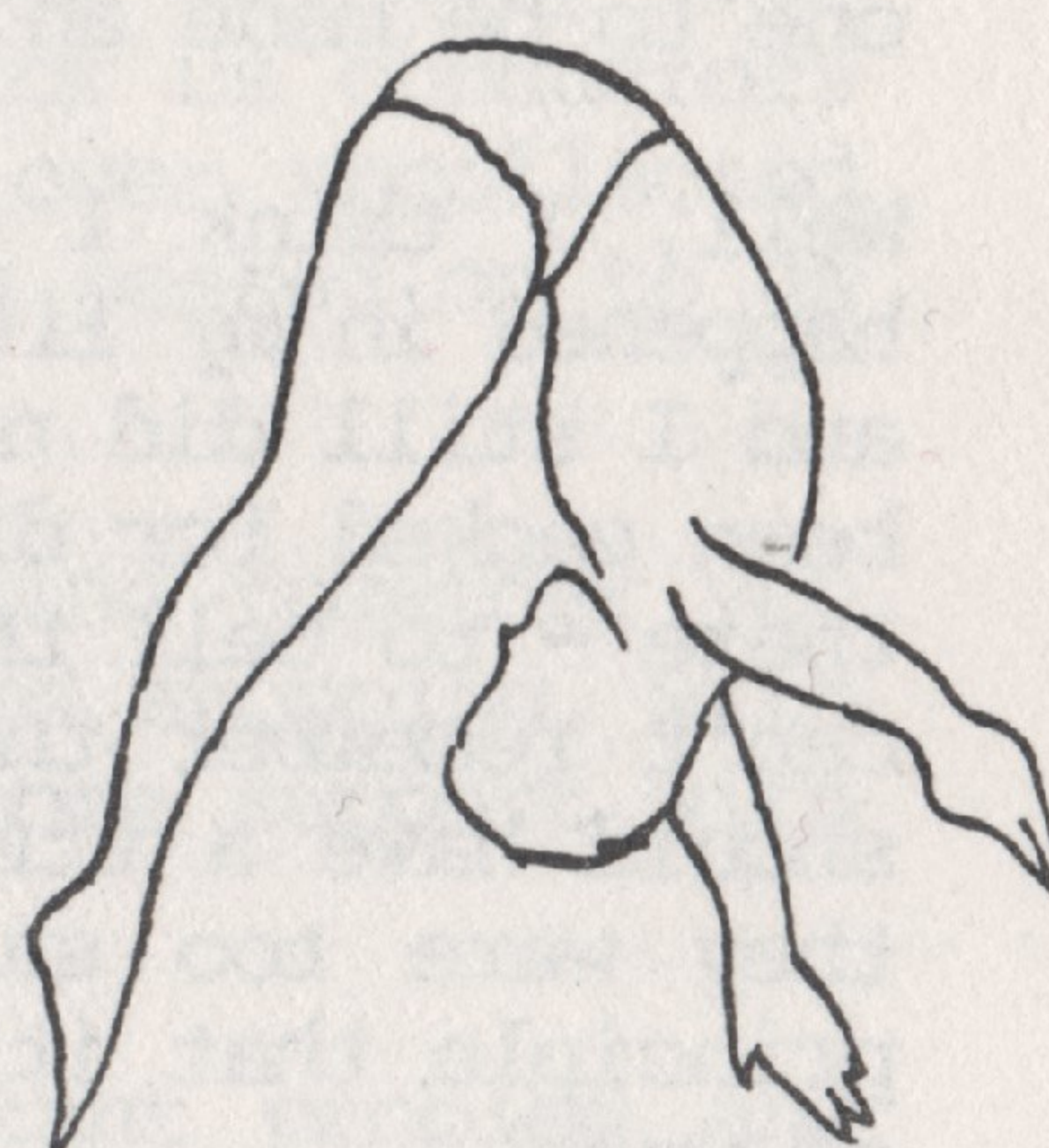


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